Distribution and Biological Characteristics of European Green Crab, *Carcinus maenas*, in British Columbia, 2006 - 2013

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DISTRIBUTION AND BIOLOGICAL CHARACTERISTICS OF EUROPEAN GREEN CRAB, *Carcinus maenas*, IN BRITISH COLUMBIA, 2006 - 2013

by

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ABSTRACT

Gillespie, G.E., Norgard, T.C., Anderson, E.D., Haggarty, D.R., and Phillips, A.C. 2015. Distribution and biological characteristics of European Green Crab, *Carcinus maenas*, in British Columbia, 2006 - 2013. Can. Tech. Rep. Fish. Aquat. Sci. 3120: viii + 88 p.

In British Columbia, European Green Crabs, *Carcinus maenas*, were surveyed from 2006 to 2013. Reproductive populations of *C. maenas* were documented within numerous inlets on the west coast of Vancouver Island. Emerging *C. maenas* populations were found on the central coast in 2011 and on southern Vancouver Island in 2012. No Green Crabs were found on the east coast of Vancouver Island or Haida Gwaii.

Large carapace widths of *C. maenas* suggested an optimal growing environment in British Columbia. The sex ratio was biased towards males, though repeated sampling within Barkley Sound produced significantly more females. Egg production was asynchronous. Moulting occurred from January to November, with peaks in April, June, July, and September. Delayed inter-moult causes an orange-red colour in *C. maenas* that was more prevalent in larger crabs, although it occurred in all sizes. Abundance of young of the year *C. maenas* was variable depending on the year and location. Recruitment was low from 2008 to 2009, moderate from 2005 to 2007 and 2010 to 2012 and high in 2013.

The native crab with the most niche overlap with *C. maenas* was Graceful Crab (*Cancer gracilis*). Red Rock (*Cancer productus*) and adult Dungeness (*Cancer magister*) Crabs may limit the habitats available for Green Crabs to colonize. Nevertheless, juvenile Dungeness Crabs are at risk as they inhabit the shallower and estuarine areas favoured by Green Crabs in British Columbia.

RÉSUMÉ

Gillespie, G.E., Norgard, T.C., Anderson, E.D., Haggarty, D.R., et Phillips, A.C. 2015. Distribution et caractéristiques biologiques du crabe européen, *Carcinus maenas*, en Colombie-Britannique, de 2006 à 2013. Rapp. tech. can. sci. halieut. aquat. 3120: viii + 88 p.

En Colombie-Britannique, les crabes européens, *Carcinus maenas*, ont fait l'objet de relevés de 2006 à 2013. On a relevé la présence des populations reproductives de *Carcinus maenas* dans de nombreux ruisseaux sur la côte Ouest de l'île de Vancouver. De nouvelles populations de *Carcinus maenas* ont été trouvées sur la côte centrale en 2011 et dans le sud de l'île de Vancouver en 2012. On n'a pas trouvé de crabes européens sur la côte est de l'Île de Vancouver ni à Haïda Gwaii.

Les gros *Carcinus maenas* à carapace large suggèrent qu'il y a un environnement de croissance optimale en Colombie-Britannique. Le sex-ratio a été biaisé en faveur des mâles, même si l'échantillonnage répété dans le bassin de Barkley a produit un nombre beaucoup plus important de femelles. La production d'œufs était désynchronisée. La mue s'est produite de janvier à novembre, avec le point culminant en avril, juin, juillet et septembre. L'intermue retardée donne aux *Carcinus maenas* une couleur rouge-orange qui était plus répandue chez les plus gros crabes, même si elle apparaissait sur les crabes de toutes tailles. L'abondance des jeunes *Carcinus maenas* de l'année était variable en fonction de l'année et du lieu. Le recrutement était faible de 2008 à 2009, modéré de 2005 à 2007 et de 2010 à 2012, et élevé en 2013.

Le crabe indigène dont la niche chevauchait le plus celle du *Carcinus maenas* était le crabe gracieux (*Cancer gracilis*). Les tourteaux rouges du Pacifique (*Cancer productus*) et les crabes dormeurs adultes (*Cancer magister*) pourraient limiter les habitats disponibles que les crabes européens peuvent coloniser. Toutefois, les crabes dormeurs juvéniles sont exposés à des risques, car ils vivent dans des eaux moins profondes et dans des zones estuariennes privilégiées par les crabes européens en Colombie-Britannique.

INTRODUCTION

The European Green Crab, *Carcinus maenas* (Linnaeus, 1758) is native to coastal areas from northern Europe to North Africa (Carlton and Cohen 2003). It is also a highly invasive species worldwide with reproductive populations in Australia, South Africa, North America and South America (LeRoux *et al.* 1990, Cohen *et al.* 1995, Grosholz and Ruiz 1995, Behrens Yamada 2001, Jamieson 2002, Jamieson *et al.* 2002, Audet *et al.* 2003, Carleton and Cohen 2003, Ahyong 2005, Behrens Yamada *et al.* 2005, Cameron and Metaxas 2005, Hidalgo *et al.* 2005, Klassen and Locke 2007, Behrens Yamada and Gillespie 2008). The most recent global-scale invasion of *C. maenas* was in 2000 to Argentina and was attributed to ballast water transport (Hidalgo *et al.* 2005). Similarly, Green Crab populations were first discovered in Newfoundland in 2007 and vessel traffic, particularly vessels carrying ballast water, was deemed the most likely vector (Blakeslee *et al.* 2010, DFO 2011). A closely related species, *Carcinus aestuarii* (= *C. mediterraneus*) is native to the Mediterranean, Black and Asov Seas, and has become established in Tokyo, Sagami, Osaka and Dokai Bays in Japan (Furota *et al.* 1999; Behrens Yamada and Hauck 2001; Chen *et al.* 2004).

A reproductive population of *C. maenas* was found in San Francisco Bay in 1989 (Cohen *et al.* 1995, Grosholz and Ruiz 1995). It was speculated that ballast water, hull fouling in ocean-going vessels, seaweed transport with commercial fisheries products, accidental or intentional release were all possible sources for this initial introduction (Cohen *et al.* 1995). In Australia, static or slow dispersal appears to be the norm for *C. maenas* though episodic ocean events such as unusually warm coastal temperatures or aquaculture related fouling may be responsible for occasional rapid dispersal (Thresher *et al.* 2003). Dispersal from San Francisco Bay was through the spread and settlement of pelagic larvae (Grosholz and Ruiz 1995; Behrens Yamada and Hunt 2000; Behrens Yamada *et al.* 2000; Behrens Yamada 2001). Increases in distributional limits were episodic, with green crabs spreading to Estero Americano, CA, in 1989; Bolinas Lagoon, Drakes Estero, Tomales Bay, Bodega Harbour and Humboldt Bay in 1993; six estuaries in Oregon and Washington in 1995 or 1996; and to British Columbia during the 1997/98 El Niño episode (Grosholz and Ruiz 1995; Miller 1996; Behrens Yamada and Hunt 2000; Behrens Yamada 2001). Larval dispersal was shown to be significantly affected by onshore currents during megalopa settlement in Europe (Queiroga 1996) and increased recruitment in Oregon and Washington populations has been linked to favourable ocean conditions (Behrens Yamada and Kosro 2010). Many researchers agree that *C. maenas* movement further up the Pacific coast is inevitable, either by larval transport in ocean currents or unregulated ballast water discharge (Jamieson *et al.* 1998, Colnar and Landis 2007, Mach and Chan 2013).

Microsatellite markers showed the San Francisco population likely resulted from a single introduction of 20-48 founding individuals from east coast of North America (Tepolt *et al.* 2009). Ribosomal RNA confirmed that the Californian *C. maenas* population originated from the Atlantic (Geller *et al.* 1997). Nova Scotia populations of *C. maenas* exploded in 1980s likely due to a secondary introduction from northern

Europe which may have cold water adaptations within those populations (Roman 2006). However research based on microsatellite markers, shows that the San Francisco founders were likely from New England and not Nova Scotia populations that are adapted to cold temperatures (Tepolt *et al.* 2009). Nevertheless, the cold tolerance of *C. maenas* sampled from British Columbia show the ability to survive temperatures such as can be found in Sitka, Alaska (Kelley *et al.* 2013), though additional factors such as larval temperature and salinity tolerances may influence range expansion (Hines *et al.* 2004).

European Green Crabs are a well-documented invasive species that have a reputation as both a competitor with native species and a major predator on clams, mussels, juvenile fishes and other species in natural settings and in aquaculture (Ropes 1968; Elner 1981; Cohen *et al.* 1995; Grosholz and Ruiz 1995; Ruiz *et al.* 1997; Jamieson *et al.* 1998; Fairchild and Howell 2000; Grosholz *et al.* 2000; Behrens Yamada 2001; McDonald *et al.* 2001; Grosholz 2002; Jensen *et al.* 2002; Walton *et al.* 2002; Whitlow *et al.* 2003; Behrens Yamada *et al.* 2005; Taylor 2005; Hidalgo *et al.* 2007; Klassen and Locke 2007; Grosholz *et al.* 2011). Green Crabs were implicated, in part, in historic declines of Softshell clams, *Mya arenaria*, and the associated commercial harvest and aquaculture on the US east coast (Glude 1955, Welch 1969, Behrens Yamada 2001). Significant predation by introduced *C. maenas* was shown on juvenile cockles, *Katelysia scalarina*, in Tasmania (Walton *et al.* 2002). In their native range, juvenile Green Crabs have had a large impact on the density of cockles, *Cerstoderma edule*, settling in Danish Wadden Sea (Jensen and Jensen 1985) and *C. edule* and *Macoma balthica* in Scotland (Richards *et al.* 1999). In Bodega Bay, California, the arrival of green crabs significantly reduced the abundance of clams and some crustaceans (Grosholz and Ruiz 1995). The effects of this direct predation can affect trophic linkages and may influence higher predators, e.g., shorebirds (Estelle and Grosholz 2012).

Aquaculturists will need to protect smaller clams, as well as mussel lines and scallop cages from *C. maenas* (McKindsey *et al.* 2007). Netting tested in Maine allowed a survival rate of nearly 56% of *Mya arenaria* where survival of unprotected clams was zero. However, the netting failed without frequent maintenance (Beal 2014). Present effects of *C. maenas* on commercial aquaculture on the west coast of North America have been minor, although there is potential to increase significantly, particularly for Manila Clams (*Venerupis philippinarum*) and Blue Mussels (*Mytilus edulis*) (Grosholz *et al.* 2011).

Projected economic impacts of Green Crab have been explored by several authors. Cohen et al. (1995) postulated negative economic impacts based on presumed ecological impacts of establishment and increased abundance in San Francisco Bay. Behrens Yamada (2001) listed eight commercially important invertebrate and fish species that could be affected by Green Crab predation. Grosholz *et al.* (2011) discussed model results that showed that past and present impacts on West Coast (California, Oregon and Washington) shellfisheries are negligible but could increase through either increased Green Crab densities or range expansion into Puget Sound or Alaska (their models do not include BC). Commercial shellfish harvest of Puget Sound could potentially suffer

revenue losses of 2.8-64% with the arrival of *C. maenas* based on recent economic models (Mach and Chan 2013).

Green Crabs also alter habitat during foraging and other behaviours, such as uprooting sea grasses while burrowing into the substrate or foraging for infauna, or tearing and cutting plants (Garbary *et al.* 2013). Sea grass (*Zostera marina*) beds increase the passive escape rate of Softshells (Wong 2013) and affect nearshore fish community structure (Morris *et al.* 2011), however, *Z. marina* beds in Nova Scotia drastically declined due to Green Crab foraging behaviour (Garbary *et al.* 2013). Concern over the recent range expansion on the east coast of Canada and the arrival and spread on west coast of Canada has prompted renewed focus on *C. maenas* biology (Gillespie *et al.* 2007, Klassen and Locke 2007) and risk assessment of this species (Hines *et al.* 2004, Therriault *et al.* 2008). The purpose of this research was to document the invasion front of *C. maenas* on the coast of British Columbia. This report expands upon previous reports documenting the arrival and persistence of *C. maenas* in British Columbia (Gillespie *et al.* 2007, Behrens Yamada and Gillespie 2008).

Data collected during annual surveys was used to elucidate *C. maenas* distribution, life history, growth and reproductive habits on the coast of British Columbia. Niche overlap with local crabs and other marine species was described in order to understand ecological impacts on native species by the establishment of *C. maenas* in British Columbia.

METHODS

Trap surveys were conducted on or near beaches along the coast of British Columbia from the southernmost site of Sooke Harbour (48° 21.4'N, 123° 43.6'W) on southern Vancouver Island to the northernmost site of Vancouver Cove (55° 27.1'N, 129° 46.3'W) on the North Coast (Figure 1). Survey locations represented a broad cross section of coastal British Columbia inlets and were determined through examination of charts and local knowledge. Preferred Green Crab habitats were targeted, including beaches with low salinity, heads of inlets or beaches associated with creek and river deltas. In addition, sites with suspected colonies of Green Crabs were included to determine the severity of colonization. Trap sampling began May 15, 2006 and is ongoing. This report is limited to data up to November 15, 2013.

Two data sets are discussed in this report. The primary data are from ongoing Green Crab distributional surveys by Fisheries and Oceans Canada. This research spans 2006 to 2013 at all locations sampled along coastal British Columbia. The majority of results are based on these surveys. A secondary data set involved Green Crab depletion research. In the depletion study, researchers repeatedly sampled and removed Green Crabs from a selected site in Barkley Sound on the west coast of Vancouver Island. The depletion study data contribute a greater sample size to supplement biological data collected during distributional surveys. Data sources are indicated in captions of the figures and tables.

For the distributional surveys, Fukui fish traps with a wide slit opening and 1.6 cm mesh size were used (Figure 2a). In the majority of sets, six traps were deployed on 60 m ground lines at approximately 10 m spacing (Figure 2b). When fish and minnow traps (six of each) were mixed on a line, then spacing was approximately 5 m. Ground lines were secured by an anchor and marked by a float on the seaward end. This arrangement facilitated recovery of the traps at any stage of the tide, either by hand at low tide or from a small vessel at high tide. The majority of traps were set in the intertidal zone. The minimum average trap depth was 0.6 m $\pm$ 0.5 (standard error of mean, n=1001) and the maximum average depth was 0.8 + 0.1 m (standard error of the mean, n=1001). Over the eight years of sampling, a range of depths were explored but all sets over 30 m were excluded as they were not directed at Green Crabs and did not catch any *C. maenas*. Average soak time per trap was approximately 20 hours, although some were soaked for up to 71 hours.

Frozen whole herring was the standard bait in this study (>96%), although other bait types were tested including prawn bait pellets, canned tuna cat food, Eulachon, Geoducks, pheromones and fish frames. The bait was enclosed in standard commercial plastic bait jars drilled with 10 mm holes. The bait jars were suspended inside the top of the traps. Tuna cans were punched with four 5 mm holes and suspended in mesh bags from the upper surface of the traps.

Crabs were processed individually by trap with species, sex, size, shell condition, shell colour, missing limbs and other injuries recorded. Carapace width was measured with Vernier calipers to the nearest millimeter using two different standards. Carapace width measured point-to-point was the longest measurement across the carapace including the 5th anterolateral spines. Notch-to-notch carapace measurements were made with caliper tips placed in the notches between the 4th and 5th anterolateral spines. The Canadian standard for crab carapace width research has been notch-to-notch, while regulations for minimum legal size use point-to-point measurements. American agencies use point-to-point measurements. This report presents point-to-point measurements to allow easy comparison of data along the entire west coast of North America.

For *C. maenas*, shell condition was categorically determined depending on hardness, wear and degree of fouling (and to a lesser degree, colour; Table 1). Carapace colour on the underside of the abdomen was classified as yellow, green, orange and red. Orange and red were later pooled as they both represent a gradual colour change that occurs during a period of prolonged inter-moult.

Seventeen of the twenty-nine Pacific Fisheries Management Areas were combined into larger geographic areas to summarize the data. The remaining twelve Pacific Fisheries Management Areas were left as individual areas, although they are named according to their primary inlet (Table 2, Figure 3).

Gillespie *et al.* (2007) proposed an age class structure for British Columbia based on carapace size and colour. This structure was simplified into the three age classes based

exclusively on carapace size within a subsequent publication (Behrens Yamada and Gillespie 2008). The age class structure for *C. maenas* from the 2008 paper was applied in this report with the following names: young of the year, mature (one to two years old) and older (two to six years). Male and female *C. maenas* differentiate after the first year, with female classes being slightly smaller than the male counterparts (Table 3).

Two types of statistical tests were applied in this report. An unpaired t-test was used to compare male and female carapace widths using an online calculator (http://graphpad.com/quickcalcs/ttest1/?Format=SEM, accessed March 14, 2014). A chi-square test of independence was applied to categorically summarized data including size, colour morphology, age structure and the differences between distributional survey and depletion research data using a downloadable excel spreadsheet (McDonald, J.H. Handbook of Biological Statistics http://udel.edu/~mcdonald/statchigof.html accessed January 28, 2014).

Bycatch was recorded by species and number of individuals caught. These species were released after sampling, with the exception of mammals collected from submerged traps. The four deceased mammals were donated to the Royal BC Museum.

RESULTS

Locations & Catch Rates

Distributional surveys include more than 129,808 trap hours for 7,121 traps sampled from 2006 to 2013. Much of the British Columbia coast was sampled including East and West Vancouver Island, Central and North Coast and Haida Gwaii (Figure 1). Not every location was sampled every year. Green crab depletion research targeted Barkley Sound in August, September and November 2010 to 2013. Depletion data includes an additional 69,583 trap hours for 2,902 traps sampled (Table 4).

Established, large populations of *C. maenas* were confirmed within numerous inlets along the west coast of Vancouver Island (Figure 4). The highest catch rates per day were most consistently found in Barkley Sound, with a maximum catch rate of 14.47 crabs per trap in 2008. Individual sets also had the highest catch rates per day of up to 122.67 crabs per trap in Barkley Sound (Appendix 1). The southernmost location with an established *C. maenas* population was Sooke Basin on southwest Vancouver Island. Sooke had 4.07 crabs per trap in 2012 and 7.93 crabs per trap in 2013 (Table 5). Only one out of 17 strings set in 2012 had a catch rate of >10 crabs per trap (53 crabs per trap) and eight of 26 strings set in 2013 had catch rates of >10 crabs per trap (maximum 66 crabs per trap) (Appendix 1, pg.79-80 & 83-84). The most northern established population of European Green Crab was documented near Bella Bella on the Central Coast with catch rates of 0.01 crabs per trap in 2011 and 0.01 in 2012 (Table 5). Two adult Green Crabs were also captured in Fish Egg Inlet in 2011; none were captured when the area was re-surveyed in 2012.

Despite extensive sampling effort (Figure 1), no Green Crabs were caught east of Vancouver Island, including Queen Charlotte Strait, Johnstone Strait and Georgia Strait as of 2013 (Figure 4).

Crab Sizes

The majority of crabs were measured using notch-to-notch and point-to-point standards and the data were plotted (Figure 5). A simple linear regression based on all *C. maenas* measured in the distributional survey and depletion data sets from 2006 to 2013 describes the relationship between the two standards:

$$CW_{NN} = 0.9062(CW_{PP}) + 0.7858$$

CW_{NN} is carapace width measured notch-to-notch and CW_{PP} is carapace width measured point-to-point. The relationship showed very little variation, having an R^2 value of 0.9936. This report used actual point-to point-measurements for the majority of results, however, when carapace width was only measured notch-to-notch, the point-to-point measurement was calculated using this regression equation.

Based on the distributional survey and depletion data, male *C. maenas* had an average carapace width of 60 mm $\pm$ 0.1 (standard error of the mean, n=26,196). The smallest male crabs were 17 mm and largest was 114 mm. The smaller size reflects catchability of small crabs in the traps; whether through decreased retention related to mesh size or decreased catchability due to behavioural factors or physical limitations of smaller crabs. Female *C. maenas* had an average carapace width of 57 mm $\pm$ 0.1 (standard error of the mean, n=25,195). Individual female crabs ranged from 18 mm to 93 mm. The largest individual *C. maenas* were both found in Barkley Sound, a red male in April 19, 2007 with a carapace width of 114 mm and a red female with a carapace width of 93 mm on June 15, 2010. Male and female *C. maenas* carapace widths were significantly different (unpaired t-test, t=52.5129, df=51,389, p-value < 0.0001).

The distribution of male or female carapace width was different between the distributional survey and depletion research data sets. For distributional survey data, male carapace width distribution was bimodal with modes of 58 and 77 mm. The female distribution was bell shaped, centered at a carapace width of 58 mm (Figure 6). However, depletion data for both male and female carapace width was skewed with a right tail and a mode of 53 mm (Figure 6).

Sex Ratio & Eggs

The distributional survey data show that male crabs composed 61.72% of the *C. maenas* captured overall years and locations. The remaining crabs included 37.80% females, 0.29% ovigerous females and 0.19% females that had just released eggs. There is variability within these data, with the number of males ranging from 25.00% to 94.29%

of catch composition (although the 25% is likely an artifact from a small sample size). In particular Sooke, sampled in 2012 and 2013, had particularly high ratio of females (64.10% to 65.87%) (Table 6).

As in the carapace width data, the distributional survey data and depletion research data had different results. The depletion research data show more females than males. Overall *C. maenas* depletion research data, there were 57.87% female, 42.10% male, 0.01% ovigerous females and 0.02% post-ovigerous females (Table 7). For a direct comparison, Barkley Sound was sampled in 2010 for both distributional survey and depletion purposes. The distributional survey data had 79.40% males while the depletion study had 35.84% male *C. maenas* (Table 6 and Table 7).

Using the combined distributional survey and depletion research data sets, 66 ovigerous female *C. maenas* were trapped. Furthermore, the data sets included 46 post-ovigerous *C. maenas* females. Ovigerous *C. maenas* were found in every month from January through August (except February). Post-ovigerous *C. maenas* were similarly trapped from January through September (except February). It should be noted that there was no sampling in February, October, December and limited sampling in November. Ovigerous *C. maenas* ranged from 41 mm to 76 mm, with an average carapace width of 59 mm $\pm$ 0.7 (standard error of the mean, n=112) (Table 8).

Shell Condition & Colour

Green crabs with new shell condition were found in all months in which surveys were conducted in both the distributional and depletion survey (Figure 7 and Figure 8). Young of the year male *C. maenas* had new shells from April through November (except October) with old shells recorded only in August and November. Mature and older male *C. maenas* had 24% and 33% new shells in January. Mature and older males with new shell condition were recorded from January through November (except February and October). Mature and older male *C. maenas* had the majority of new shells in June with 97% and 75% respectively. New shell condition was the most common shell condition for mature and older male green crabs from April through July. There was a decrease in abundance of *C. maenas* with new shells in August. Nevertheless, new shell condition in mature male *C. maenas* increased again in September with 71% of the crabs sampled having new shells (Figure 7).

Female *C. maenas* had new shells present in all months sampled. Young female crabs were primarily found in new shell condition, with old shell condition only found in May, August and November. Mature and older females peaked in June and July with 83% (mature females) and 68% (older females) new shells. As in the males, there was a decrease in abundance of *C. maenas* with new shells in August, particularly for the mature and older females. The mature female *C. maenas* had a secondary peak in September with 71% of the mature females sampled having a new shell condition (Figure 8).

New shells were noted in all larger sizes in January of both male and female *C. maenas*. Note that there was no sampling in February, October or December. Furthermore, limited sampling in November was exclusively from depletion research.

In the distributional survey and depletion research data sets, colour morphology and shell condition were significantly correlated (chi-square test of independence: X^2=28758.917, df=4, P-value<0.0000). A large percentage of the *C. maenas* with a new shell condition presented with a green thorax, 86%, followed by 10% yellow and 4% orange-red. Whereas crabs exhibiting an old shell condition tended to be an orange-red colour at 84%, old green shells at 15% and old yellow at only 1% (Figure 9). Larger and older male and female *C. maenas* also exhibited proportionally more old and uncertain shell conditions than young of the year or mature crabs (chi-square test of independence: X^2=3648.566, df=10, P-value<0.000).

Age Structure & Recruitment

Green Crabs collected in distributional surveys and depletion research exhibited significantly different age structure (chi-square test of independence: X^2=4985.435, df=5, P-value<0.000). In *C. maenas* sampled from distributional surveys, older males (31%) and mature males (29%) were most abundant, followed by mature females (20%) and older females (17%). The least represented classes were young males and young females (both 1%) (Figure 10).

Depletion data showed a different view of the population with mature female (36%) and mature male (30%) crabs dominating the collections. The older females (18%) and older males (9%) were next in abundance. The young males (4%) and young females (3%) were the least abundant age class in the depletion data (Figure 10).

The proportion of young of the year age class indicated that recruitment of *C. maenas* was moderate in 2006 to 2007, low from 2008 to 2011 and high in 2012 and 2013 for the distributional research (Figure 11). Location is confounding these results as surveys were in different locations every year (Figure 1). During the depletion survey within Barkley Sound, young of the year age classes were low in abundance in 2010 to 2012 and high in 2013 (Figure 11).

Another means of assessing relative recruitment levels is to compare mature crabs (40-70mm carapace width), which do not experience size-related catchability issues like young of the year crabs, to estimate recruitment in the previous year. Using this method, there appears to be reasonable recruitment in 2005-2007, relatively poor recruitment in 2008-2009, and increased recruitment levels in 2010-2012 (Figure 12). The frequency distributions also exhibit a fair number of young of the year crabs in 2013 which likely indicates good recruitment (especially considering reduced catchability for this age class).

Native Crab Species

Distributional surveys targeted *C. maenas* with 44.26% of the 47,841 crabs collected and measured being European Green Crab. The most common native crab species caught during this study was *Cancer gracilis*[1], commonly known as Graceful Crab. Graceful Crab represented 28.56% of the crab species sampled. *Cancer magister*, Dungeness Crab and *Cancer productus*, Red Rock Crab, were next in abundance with 14.53% and 12.54% respectively. *Pugettia productus* or Northern Kelp Crab was relatively rare, representing only 0.12% of the crabs sampled (Table 9).

Highest catch rates for Graceful Crab were 15.14 crabs per trap in Sooke. While *C. maenas* were present in Sooke, their catch rates were still low in 2012 (4.07 crabs per trap). Nevertheless, they increased to 7.93 crabs per trap in 2013 giving a mean number of crabs per trap of 6.44. Conversely, when *C. maenas* values were consistently high over multiple years in Barkley Sound (average 9.03 crabs per trap), *C. gracilis* catch rates were low (2.04 crabs per trap) (Table 10). Location and depth unavoidably confound these results.

Catch rates of *C. magister* and *C. productus* were similar to each other with 1.05 and 0.89 crabs caught per trap overall. The highest catch rate for *C. magister* was 13.14 per trap in Lower Georgia Strait. Both *C. maenas* and *C. gracilis* were absent at this productive *C. magister* site. *C. productus* was most abundant in Victoria with 3.47 crabs per trap, closely followed SE Vancouver Island with 2.89 crabs caught per trap. *C. maenas* were not present at either of these sites (Table 10).

Bycatch

During the distributional surveys, bycatch included crustaceans, fish, echinoderms, molluscs and mammals. Crustaceans, not including *C. maenas*, made up 77.99% of the bycatch with 30,256 individuals captured over eight years (Table 11). The most common species included Graceful Crab (45.16%), Dungeness Crab (23.43%) and Red Rock Crab (19.83%). Other crustacean species each composed less than 3% of the total crustacean catch (Appendix 2).

Fish comprised 18.51% of the overall bycatch with 7,182 individuals captured (Table 11). The most common fish was *Leptocottus armatus* (Pacific Staghorn Sculpin) with 78.35% of individuals caught. Many other species were only represented by one individual: *Blepsias cirrhosis* (Silverspotted Sculpin), *Brachyistius frenatus* (Kelp Perch), *Clupea pallasii* (Pacific Herring), *Embiotoca lateralis* (Striped Seaperch), *Oncorhynchus*

[1] Although some published literature divides the genus *Cancer* into several genera and places *C. gracilis* and *C. magister* into the genus *Metacarcinus*, the decision is not supported in all published literature at this time. Jensen (2014) continued to use the older arrangement, stating that the proposed division was "based on very few characters and is at odds with the molecular evidence". We follow Jensen in retaining the older classification.

clarki (Cutthroat Trout), *Oxylebius pictus* (Painted Greenling), *Psettichthys melanostictus* (Sand Sole), *Rhacochilus vacca* (Pile Perch), *Salvelinus malma* (Dolly Varden), and *Scorpaenichthys marmoratus* (Cabezon) (Appendix 3).

Molluscs included 2.20% of the overall bycatch (Table 11). The most represented species was *Lirabuccinum dirum* (Dire whelks) at 69.44%. The least common mollusc species were *Ocinebrina interfossa* (Sculptured Rocksnail) and *Pomaulax gibberosa* (Red Turban) (Appendix 4).

Echinoderms included 1.28% of the overall bycatch during this study (Table 11). The most common echinoderm captured was *Pycnopodia helianthoides* (Sunflower Star) with 73.59% of the total echinoderm catch. *Patiria miniata* (Bat Star) was the second most abundant echinoderm with 17.34% of the individuals caught (Appendix 5).

Mammal capture was rare, with only 5 individuals caught after 129,808 trap hours. Four out of five individuals were American Mink (*Neovision vison*), whereas the remaining individual was a shrew, family Soricidae.

DISCUSSION

Locations & Catch Rates

Reproductive populations of *C. maenas* have been documented on West Vancouver Island since 1999 and have spread north from initial reports in Barkley Sound through Clayoquot Sound, Nootka Sound Esperanza Inlet, Kyuquot Sound and Quatsino Sound (Gillespie *et al.* 2007). This report documents further dispersal of *C. maenas* to isolated populations on the Central Coast of British Columbia prior to 2011 and Sooke prior to 2012. Catch rates in British Columbia are higher than found in Washington and Oregon but the averages are lower than those found in Australia. Washington had catch rates ranging from 0.006 to 0.011 *C. maenas* per trap day (McDonald *et al.* 2006). Oregon and Washington catch rates were measured per 100 traps as they were generally two orders of magnitude lower than British Columbia data (Behrens Yamada and Randall 2012). Mean catch rates in Australia were up to 34.5 and 43.7 *C. maenas* per trap per night in Tasmania (Thresher *et al.* 2003). Individual sets on the west coast of Vancouver Island were as high as 122.67 crabs per trap per day; catch rates of some populations were higher than those in Australia, even though the distributional survey averages were lower. In Australia, the most significant factor for catch rates was yearly variation (Thresher *et al.* 2003). Similarly for New Brunswick and Maine, catch rates per day showed marked variation depending on winter water temperature with the catch rates per day ranging from zero to over five hundred at the same site depending on the year (Welch 1969).

Ropes (1968) examined temperature and feeding activity and concluded that feeding was curtailed at temperatures of <7°C (presumed to be surface temperatures although no method for determining temperatures was included). January sampling in

Pipestem Inlet in 2008 and 2009 occurred at relatively low water temperatures (4-5°C) and through surface ice at the head of the inlet. Catches and catch rates were relatively high; 1,392 crabs were caught in 54 traps in 2008 and 1,301 crabs caught in 95 traps in 2009, for catch rates of 25.78 and 13.69 per trap, respectively. The results from these surveys indicate that Green Crab continue to actively forage when surface temperatures in the freshwater lens are as low as 0°C, and temperatures recorded at depth were 4-5°C.

The current range of *C. maenas* in British Columbia includes the west coast of Vancouver Island, and isolated populations in the Central Coast and Juan de Fuca Strait. Green Crabs have not been detected in the east coast of Vancouver Island (Strait of Georgia, Johnstone and Queen Charlotte Straits). The arrival of *C. maenas* to this inland sea may be inevitable since there are favourable habitats and numerous potential invasion vectors. The northern tip of Vancouver Island has currents compatible with larval transport from the west coast of Vancouver Island. In addition, the Strait of Georgia has large amounts of shipping traffic with ballast water discharge (Therriault *et al.* 2008). The central area of the Strait has numerous aquaculture shellfish processing plants that receive shellfish and supplies from the west coast of Vancouver Island and present another possible vector for introduction (L. Curtis, Pacific Biological Station, Fisheries and Oceans Canada, pers. comm.). There is also abundant recreational and commercial boating traffic along the east coast of Vancouver Island (Therriault *et al.* 2008). Ongoing surveys will continue to monitor this area for *C. maenas*.

Crab Sizes

The peak male carapace width distribution overall years was 53 mm and 77 mm from distributional and depletion data respectively. This likely represents the first year cohort and subsequent years grouped into the latter mode. It becomes difficult to distinguish fast growing individuals from slow growing individuals as the older crabs may not moult every year (Behrens Yamada *et al.* 2005). Female carapace width for *C. maenas* in British Columbia peaked at 52 mm with the combined distributional and depletion data. This likely represents the first year cohort. The older female cohort was considerably less visible but present in the broad tail to the right. Comparable carapace width values were found in Oregon of 32–60 mm after their first summer and 52–80 mm after the second summer (Behrens Yamada *et al.* 2005). These sizes are significantly larger than *C. maenas* from other regions. Crabs collected from Netherlands were 20 mm after the first winter in the spring and grew to 50 mm in September (Klein Breteler 1976). In Portugal, male *C. maenas* were 32 mm after first season, 43 mm after second year and 53 mm after third year. Whereas female *C. maenas* were 33 mm after first season, 43 mm after second season and 52 mm after third season (Baeta *et al.* 2005). In Australia, a carapace width of greater than 55 mm was considered a large adult (Thresher *et al.* 2003). In United Kingdom, males were recorded up to 86 mm and females up to 70 mm (Crothers 1968) which is still smaller than the larger sizes measured in British Columbia.

Large *C. maenas* on the Pacific Coast were predicted in the literature. Based on two year old carapace widths, the number of moults was multiplied by a conservative percent increase per moult, Grosholz and Ruiz (1996) predicted a theoretical male *C. maenas* size of up to 110 mm. Other work has confirmed that British Columbia crabs are significantly larger compared with the United Kingdom. The largest *C. maenas* in the published literature was 101 mm for a male crab and 85 mm for a female crab from Barkley Sound, British Columbia (McGaw *et al.* 2011). This study similarly found a single, red male *C. maenas* in April 19, 2007 with 114 mm carapace width (converted from 104 mm notch-to-notch). This study also found a single, red female *C. maenas* collected on June 15, 2010 having a carapace width of 93 mm (converted from 85 mm notch-to-notch). Both individuals were trapped in Barkley Sound, British Columbia. The calculated values may not be entirely accurate as they are at the edge of the range of observed values. Nevertheless, the notch to notch measurements are still as large for the female *C. maenas*, and larger for the male *C. maenas*, than previously reported in the literature. Research examining the crusher claws in Canadian *C. maenas* also showed that the carapace width was approximately 1.5 times larger than *C. maenas* from Europe with proportionally larger crusher claws (Schaefer and Zimmer 2013).

Many factors likely combine to make *C. maenas* growth so successful in British Columbia. It has been predicted that the fast growth rates are due to ecological release and the growth rates may slow after populations established (Behrens Yamada *et al.* 2005). In addition, the increased size of *C. maenas* may be partially attributed to release from parasites (Torchin *et al.* 2001). Favourable water temperature also likely contributes to increased growth. In Maine, USA, growth was delayed in water temperatures less than 10°C, limiting the growing season and increasing the generation time to more than three years (Berrill 1982). In British Columbia the generation time, or time to become reproductive is approximately one year. *C. maenas* are also reproductive after their first year in Oregon (Behrens Yamada *et al.* 2005). Additional ecological factors allowing success of an invasive species include reduced competition and better environmental conditions (Torchin *et al.* 2001). Competition will be discussed in a subsequent section on native crabs, but it is strongly suggested that British Columbia has optimal environmental conditions for *C. maenas* growth.

Sex Ratio & Eggs

Female *C. maenas* have been less reported than males in the literature. Female *C. maenas* were virtually absent from upper shores traps in the United Kingdom (Hunter and Naylor 1993). This was explained by increased mobility of the male green crabs with summer tides compared with red or female crabs (Hunter and Naylor 1993). In Portugal, more juvenile *C. maenas* males were found compared with than female *C. maenas*. This was attributed to movement of females to downstream areas more favourable for egg development (Baeta *et al.* 2005). Ovigerous females tend to move to the lower estuary to release their eggs (Queiroga 1996). Our distributional survey data agreed with the published literature that male *C. maenas* are sampled proportionally more than females. However, the depletion research showed a higher female sex ratio, suggesting that as

males are removed from the population, female catchability increases. This phenomenon was confirmed in a recent study in Maine, USA where the sex ratios were heavily skewed towards males in the beginning of the season but became nearly equal by early November after repeated trapping (Beal 2014). The presence of more female *C. maenas* in the depletion research gives valuable insight into the reproductive habits of *C. maenas* in British Columbia.

Ovigerous female *C. maenas* were recorded in almost every month sampled in British Columbia; reproduction is not a synchronized event as has been reported in some locations. Green Crabs may have one breeding season in adverse conditions but may have a continuous breeding season in favourable conditions. In United Kingdom, the main mating season is July, after the female moult, however, younger females may have secondary summer mating that proceeds rapidly in high temperatures (Crothers 1968). Another United Kingdom study showed that mating pairs were most common in August and September. Ovigerous *C. maenas* occurred February through June, with eggs most common in April and May (Naylor 1962). Mating begins first week of August in Denmark (Styrishave *et al.* 2004). Gravid females were collected in autumn from the US Pacific coast and held in the lab. They released their eggs in November and December and produced viable larvae in February (Behrens Yamada and Gillespie 2008). The presence of larval *C. maenas* virtually all year long supports the suggestion that breeding is possible year round in British Columbia (L. Curtis, Pacific Biological Station, Fisheries and Oceans Canada, pers. comm.). In Portugal, year-round egg production was linked to latitude within the native range (Baeta *et al.* 2005). Females carry their eggs for several months and eggs will develop normally above 10°C as long as the salinity is above 26‰ (Crothers 1968). Local temperature and salinity data for Pipestem Inlet in Barkley Sound have been recorded over multiple years and it will be interesting to see the results in relation to green crab growth and recruitment (L. Curtis, Pacific Biological Station, Fisheries and Oceans Canada, pers. comm.).

Ovigerous females averaged 59 mm and ranged from 41 to 76 mm wide in British Columbia. This is comparable to sexually mature females of 40 mm found in Bodega Harbour, USA (Grosholz and Ruiz 1995). On the East coast of North America, the smallest ovigerous females were 34 mm (Berrill 1982). In the native range, females are mature after 11-12 months at a smaller carapace width of 15 – 31 mm (Crothers 1968). Nevertheless, gravid female *C. maenas* were found in Portugal, with a carapace width from 29 mm – 43 mm and 70% of those were the red (old shell) colour morph (Baeta *et al.* 2005).

Shell Condition & Colour

Moult timing in British Columbia, indicated by shell condition, was asynchronous and occurred from January through November with peaks in April, June, July and September. No sampling was conducted in February, October or December, so moulting may occur year round, similar to egg production. Moulting and mating are linked as mating can only occur while the female is soft following a moult (Berrill and Arsenault

1982). Although moulting occurred year round in Portugal, males moulted primarily from April to June whereas females moulted later in season from July to October (Baeta *et al.* 2005). Similarly, moults occurred year round in United Kingdom, although there was more moulting observed in summer compared with winter. The exception was January and February when half the crabs collected were newly moulted (Naylor 1962). A January moult was also observed in British Columbia. No winter moults were reported in Oregon between October and April. Nevertheless, Oregon crabs do moult more frequently compared with Portugal (Behrens Yamada *et al.* 2005). Moulting crabs tend to hide and are not caught in traps so they are often less visible in populations (Naylor 1962). Nevertheless, there is usually a period of anecdysis, or inter-moult, in the coldest months, often January through March (Crothers 1968). New shell condition was observed in the month of January in British Columbia.

Food availability and temperature effects on moult frequency have been used to explain the increased growth rates of *C. maenas* on the Pacific coast (Behrens Yamada *et al.* 2005). Perhaps the inter-moult stage is shorter or unnecessary in the favourable conditions present in British Columbia inlets. Growth (and therefore moulting) was suppressed under 10°C in Maine, USA (Berrill 1982). Comparison of moult timing with temperature data may elucidate this correlation. However, moult timing may be more complex than just temperature dependence as other factors such as tidal and semilunar rhythms have been shown to effect moulting in juvenile *C. maenas* (Zheng *et al.* 1999).

Ventral shell colouration varies from yellow to green to orange to dark red and this shift is related to shell age; *i.e.*, new shells are yellow then turn green, orange and eventually red (McGaw and Naylor 1992; McGaw *et al.* 1992; Reid *et al.* 1997; Wolf 1998; McKnight *et al.* 2000; Rewitz *et al.* 2004; Styrishave *et al.* 2004; Lee *et al.* 2005; Brian *et al.* 2006; Todd *et al.* 2006). The colour phases have also been linked to differences in physiological ecology; yellow or green crabs have broader physiological tolerance than orange or red crabs, have greater osmoregulatory capability, can withstand hypoxia better and may even be more tolerant of pollution (Reid and Aldrich 1989; Reid *et al.* 1997; Styrishave *et al.* 2000, 2004; Lee *et al.* 2003, 2005). Large red male crabs are stronger than green males and out-compete them for habitat, mates and prey (Kaiser *et al.* 1990; Reid *et al.* 1997). Styrishave *et al.* (2004) postulated that green males are utilizing a "growth" life history strategy while red males are in a "reproductive" life history strategy. Differences in tolerances and competitive advantages are expressed in the crab's distribution with red males more common in sub-tidal habitats and green males more common in stressful, marginal estuarine and rocky intertidal habitats (Kaiser *et al.* 1990; McGaw *et al.* 1992; McKnight *et al.* 2000; Lee *et al.* 2005).

Larger male crabs delay moulting to increase reproductive success. Anecdysis or delaying moulting causes a built up of pigment producing a red colour. Red and green colours are found in all size classes but proportionally there are more red crabs in larger size classes (Styrishave *et al.* 2004). The correlation between shell condition and colour was confirmed in this research. Mortality of red *C. maenas* is higher in hypoxic conditions compared with green crabs. At low oxygen levels red crabs leave the water to air breathe before green crabs (Reid and Aldrich 1989). Red crabs also exhibit increased

movement as a behavioral response to sub optimal salinities (McGaw and Naylor 1992). However, red male *C. maenas* have a reproductive advantage with bigger gonads and more spermatophores compared with green males of similar sizes (Styrishave *et al.* 2004). It has been hypothesized that the higher percentage of green morphotypes found in Barkley Sound may reflect a higher growth rate from a population experiencing ecological release (McGaw *et al.* 2011).

Age Structure & Recruitment

The age classification based on carapace width of *C. maenas* (Table 3), developed by Behrens Yamada and Gillespie (2008), appears to be an effective classification for ages in British Columbia. Despite the fact that British Columbia *C. maenas* presumably reach larger sizes than in Australia, young of the year were sized similarly with a carapace width of less than 45 mm considered to be young of the year (Thresher *et al.* 2003). Along the Oregon and Washington coast, the average carapace width was 46 mm by September after first year of growth (Behrens Yamada *et al.* 2005). A subsequent study found carapace width ranged from 35-51 mm and averaged 44 mm at end of first year (Behrens Yamada and Kosro 2010). Our young of the year age category of < 40 mm balances these slightly larger widths with the presence of reproductive females as small as 41 mm in British Columbia. Along the US Pacific coastline, male *C. maenas* grew 52 - 80 mm into the summer of the second year of growth (Behrens Yamada *et al.* 2005). Behrens Yamada and Gillespie (2008) pooled older age classes for *C. maenas* into older males greater than 70 mm and older females greater than 65 mm. This age class structure combining the older green crabs into one group appears justified with no clear cohorts within the larger carapace sizes (Figure 6).

The distributional survey data had more male *C. maenas* compared to the depletion research. This can be explained as male green crabs are significantly more attracted to baited traps and are more mobile (Hunter and Naylor 1993). In Portugal, more juvenile *C. maenas* males were found than females. This was attributed to movement of females to downstream areas (Baeta *et al.* 2005). Our preliminary results from the depletion research suggest that as mature and older males were removed, more female and young of the year *C. maenas* entered traps. Agonistic behavior by older and larger crabs may deter smaller crabs from attempting to enter traps.

Relative recruitment was low in 2008 and 2009, moderate in 2005-2007 and 2010-2012, and high in 2013 (Figure 11 & Figure 12). Increased recruitment may be correlated with an environmental factor such as winter water temperature which affects the entire coast of British Columbia. On the U.S. Pacific coast, year class strength was strongly correlated to warm winter temperatures, El Niño and late spring transitions that facilitate onshore currents (Behrens Yamada and Kosro 2010). Green Crab demonstrate greater survival of adults and eggs in warm winter water temperatures (Glude 1955). In warm winters, *C. maenas* also have a secondary breeding cycle in late summer with settling of larvae during the winter or early the following year (Crothers 1968). Increases

in *C. maenas* abundance have been linked to long term warming trends on the east coast of North America (Welch 1969).

Density-dependent recruitment and cannibalism may also explain high recruitment seen in 2012 in the distributional surveys and 2013 in both the distributional and depletion data. Beginning in 2010, depletion research removed large crabs that would have preyed upon the young of the year, possibly increasing the survival of young age classes. High recruitment in distributional surveys during the same years were based on Sooke and Central Coast catch rates because the remainder of the survey effort was on the east coast of Vancouver Island. Sooke and Central Coast both had emerging populations of *C. maenas*, therefore, young of the year were more prevalent and large crabs were limited. Further research is required to determine the most important factors underlying recruitment of *C. maenas* in British Columbia.

Native Crab Species

Graceful Crab will likely be the species most impacted by the establishment of *C. maenas* in British Columbia. Graceful Crabs utilize soft substrate habitats in the intertidal and shallow sub-tidal zones (Hart 1982) and catch rates suggest there is considerable niche overlap for adult life stages of both species. Catch rates also indicate that lower numbers of Graceful Crabs were caught when *C. maenas* catch rates were high (Table 10). Location unavoidably influenced these catch rates. However, more years of catch rate data from Sooke and other emerging populations of Green Crab will help clarify the impact of *C. maenas* on *C. gracilis*. Data and literature for Graceful Crab are limited as it is not an economically important species in British Columbia and therefore has not garnered much research interest.

The literature regarding the impact of *C. maenas* on *C. magister* is contradictory. On the Pacific coast, *C. maenas* prefers soft substrate and estuaries so it has been suggested that there would be a large impact on Strait of Georgia Dungeness Crabs (Jamieson *et al.* 1998). In Washington, eel grass habitats, Littleneck Clams (*Leukoma staminea*) and juvenile Dungeness Crabs were predicted to be most impacted by arrival of *C. maenas* (Colnar and Landis 2007). *C. maenas* have larger crusher claws compared with equivalent sized *C. magister*. Both prefer softer shelled mussels over oysters, but *C. maenas* is more able to prey on hard shelled oysters (Behrens Yamada *et al.* 2010). However, bioenergetics modelling, combined with sampling, indicated that *C. maenas* may avoid interactions with *C. magister* by niche segregation. It was postulated that *C. maenas* was limited to mid-littoral environments due to agnostic interactions with *C. magister* in Washington, USA (McDonald *et al.* 2006). Recent literature suggests that *C. magister* may not be as impacted by invading *C. maenas* as previously predicted (Grosholz *et al.* 2011). Our catch rate data cautiously supports the hypothesis that niche segregation occurs between *C. maenas* and adult *C. magister*. However, newly settled Dungeness crabs are distributed on soft-bottom substrate in shallow coastal zones and estuaries (Rooper *et al.* 2002); where there is considerable overlap with adult *C. maenas*. However, the impacts of additional mortality due to predation of early instar Dungeness

Crabs by *C. maenas* have not been quantified. Moreover, the ecosystem within the Strait of Georgia is too complex to predict with certainty the effects from the potential arrival of *C. maenas*.

Habitat use of *C. maenas* in British Columbia appears to be limited compared with its' native range. Green Crab are absent from rocky environments even though they use those habitats in Europe and in Eastern North America (Grosholz and Ruiz 1996). Similar to British Columbia, *C. maenas* in Australia were found primarily on soft sediment bottoms, with low to moderate wave action and most were estuaries or sheltered bays (Thresher *et al.* 2003). Red Rock Crab, *C. productus*, may serve to limit the distribution of *C. maenas* especially in more saline and rocky habitats. Catch rates for *C. maenas* had a negative correlation with the presence of *C. productus*. In addition, a laboratory study showed predation by *C. productus* on *C. maenas* (Hunt and Behrens Yamada 2003). Our results support this with high catch rates of *C. productus* corresponding to no or few *C. maenas*. In the Atlantic, predation by the Blue Crab, *Callinectes sapidus*, may limit the range and habitat of *C. maenas* (deRivera *et al.* 2005). Another study showed that predation, indicated by limb loss, was just as high in introduced populations of *C. maenas* compared with the native range (Torchin *et al.* 2001). There is also the potential for competition with *Hemigrapsus oregonesis* (Cohen *et al.* 1995). Intense competition was documented between native *C. maenas* and an invasive *Hemigrapsus* species, particularly on hard substrates (oyster beds), and it caused *C. maenas* to be limited to soft sediment habitats in a Dutch Delta (van den Brink *et al.* 2012). Further research on the interactions between *C. maenas* and their native competitors in British Columbia is required.

Bycatch

Species caught incidentally while trapping during Green Crab surveys included fish (57 species), crustaceans (30 species), molluscs (10 species), echinoderms (8 species) and mammals (2 species) (Appendix 2 to 5). There were also foraging interactions with large mammals; many traps were damaged or destroyed by American Black Bear (*Ursus americanus*) and to a lesser extent by Pacific Harbour Seal (*Phoca vitulina*).

Most fish were relatively small, inshore species common in British Columbia (Hart 1973). Large species were rarely caught; the only notable exception being several North Pacific Spiny Dogfish. Pacific Staghorn Sculpins, the fish most commonly caught in traps, are extremely tolerant of low salinity and are known to penetrate the lower reaches of coastal streams (Hart 1973; Mecklenberg *et al.* 2002). The presence of primarily freshwater Prickly Sculpins in traps at locations that had high catch rates of Green Crab, is correlated to relatively low salinity which allows these fish to be found on beaches and may confer advantage to *C. maenas* by deterring competition by larger native crabs (Hunt and Behrens Yamada 2003; deRivera *et al.* 2005).

CONCLUSIONS

The European Green Crab is well established in the inlets along the west coast of Vancouver Island. It had spread to the Central Coast by 2011 and Sooke by 2012. As of 2013, there were no Green Crabs found along the east coast of Vancouver Island or Haida Gwaii. The *C. maenas* sampled had a relatively large carapace width reflecting an optimal environment in British Columbia. Egg production is asynchronous and may occur most of the year. Moulting also occurred most of the year, with peaks in April, June, July and September depending on the sex and age class of the crab. An age class structure for British Columbia was discussed based on carapace width. Recruitment or presence of young *C. maenas* is strongly dependent on the year. Young of the year were virtually absent in 2008 and 2009, although they were present from 2005 to 2007 and 2010 to 2012, and abundant in 2013. Currently, Graceful Crab is the native crab species most closely associated with *C. maenas*. Adult Dungeness Crabs have little niche overlap, but early juveniles recruit into estuarine habitats preferred by *C. maenas*. Competition by Red Rock Crab may limit *C. maenas* to soft sediment habitats in British Columbia; competition with adult Dungeness Crabs may limit Green Crab distributions to shallow portions of estuaries and beaches. Any of these relationships may be altered if *C. maenas* spreads into the Strait of Georgia

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TABLES

Table 1. Shell condition codes and descriptions for European Green Crab, *Carcinus maenas*, surveys in British Columbia, 2006-2013.

Adapted from DFO standard shell age assessments for Dungeness crabs.

Shell Condition	Code	Description
Plastic	4	A newly moulted crab likely 1 - 2 days old. Underside of thorax will be primarily white rather than yellow, dark green or brown and every part of the shell can be easily deformed with light pressure. A short-duration stage immediately following a moult.
New Soft	3	A recently moulted crab. Underside of thorax will be white or yellow and some springiness in the shell can be detected. Also a very short stage probably lasting less than a week.
New Springy	2	Carapace will be hard but legs may remain slightly springy. Underside of thorax will be lemon yellow or greenish-yellow. There will be no fouling, barnacle growth or abrasion of carapace spines, claws or tips of dactyls.
New Hard	1	Underside of thorax will be green or brown. Few if any signs of wear or abrasion on carapace. May have barnacles but these will be small. Very little claw wear and cusps of claws are not rounded and worn. As these crabs age it will be increasingly difficult to determine if the shell is new or old.
New-Old	8	Shell has a mixture of characteristics of new hard and old shell conditions. May exhibit some fouling and barnacle growth. Shell shows signs of wear, especially on cusps and tips of claws, but the crab is still relatively clean and vigorous.
Old	6	A crab showing claw wear and possibly barnacle encrustation or other fouling growth but otherwise a healthy, viable crab. Shell may appear very clean and bright but claws will show unmistakable signs of wear (*i.e.*, worn cusps, faded colour near cusps and tips, broken claw tips). Carapace spines and tips of dactyls will also be blunted. Often have scars and abrasions and areas of blackening around injuries.
Very Old	7	Extreme shell and claw wear, may have shell disease; tips of walking legs may be black or rotting off. These crabs always appear lethargic and moribund. The crab probably has not moulted for 2 or more years. The crab is probably in terminal moult. Barnacles often present, usually large or two size classes.
Moulting	5	Old shell which is splitting at the suture line (seam between upper and lower halves of the shell) and is in process of moult. Suture *must be opening at time of observation*. This stage is of very short duration, several hours at most.
Moult	9	Discarded carapace, usually found on a beach, which may or may not be attached to rest of body

Table 2. Names used in this report based on Pacific Fisheries Management Areas (PFMA).

PFMA	PFMA Description	Names in Report
1	Northern Haida Gwaii	Haida Gwaii
2	Southern Haida Gwaii	Haida Gwaii
3	Portland Inlet	North Coast
4	Chatham Sound, Porcher Island	North Coast
5	Greenville Channel, Principe Channel	North Coast
6	Princess Royal Island	Central Coast
7	Prince Island, Hunter Island	Central Coast
8	Fitz Hugh Sound	Central Coast
9	Calvert Island, Rivers Inlet	Central Coast
10	Cranstown Point, Table Island	Smith Sound
11	Cape Caution, Westcott Point	NE Vancouver Island
12	Northern Johnstone Strait	NE Vancouver Island
13	Quadra Island, Cortez Island	SE Vancouver Island
14	Oyster River, Parksville	SE Vancouver Island
15	Brettell Point, Powell River	Sunshine Coast
16	Texada Island, Lasqueti Island, Jervis Inlet	Sunshine Coast
17	Nanoose Bay, Galiano Island	SE Vancouver Island
18	Mayne Island, Saanich	SE Vancouver Island
19	Saanich, William Head	Victoria
20	Sooke, Bonilla Point Lighthouse	Sooke
21	Tzuquanah Point, Nitinat Lake	Nitinat
22	Tzuquanah Point, Nitinat Lake	Nitinat
23	Cape Beale, Ucluelet	Barkley Sound
24	Cox Point, Estevan Point	Clayquot Sound
25	Nootka Sound, Esperanza Inlet	Nootka - Esperanza
26	Union Island, Solander Island	Kyuquot Sound
27	Solander Island, Lawn Point, Cape Scott	Quatsino Sound
28	Bowen Island, Squamish, Vancouver, Indian Arm	Vancouver
29	Lower Georgia Strait	Lower Georgia Strait

Table 3. Age class structure for *Carcinus maenas* recommended for the coast of British Columbia, taken from Behrens Yamada and Gillespie (2008).

Age Class	Age	Sex	Size
Young of the Year	Within 1 year from larval settling	Both	< 40 mm
Mature Male	1-2 years from larval settling	Male	40 - 70 mm
Mature Female	1-2 years from larval settling	Female	40 - 65 mm
Older Male	2-6 years from larval settling	Male	> 70 mm
Older Female	2-6 years from larval settling	Female	> 65 mm

Table 4. Sampling effort (number of traps) for European Green Crab, *Carcinus maenas*, in British Columbia, 2006 to 2013, distribution survey and depletion research data sets.

Research and Location	2006	2007	2008	2009	2010	2011	2012	2013	Total
Distribution Surveys	**785**	**1224**	**1118**	**454**	**1055**	**818**	**781**	**886**	**7121**
Haida Gwaii						221	198		419
North Coast				136					136
Central Coast		82	596			333	475		1486
Smith Sound		43				72			115
NE Vancouver Island	36	192	54			192	6		480
SE Vancouver Island	125	54						372	551
Sunshine Coast	60							179	239
Victoria	36							108	144
Lower Georgia Strait								66	66
Sooke							102	161	263
Barkley Sound	164	483	468	251	449				1815
Clayquot Sound	198	42			138				378
Nootka - Esperanza	149	51		67	270				537
Kyuquot Sound	17	37			36				90
Quatsino Sound		240			162				402
Depletion Research					**790**	**528**	**576**	**1008**	**2902**
Barkley Sound					790	528	576	1008	2902
Total	**785**	**1224**	**1118**	**454**	**1845**	**1346**	**1357**	**1894**	**10023**

Table 5. Catch rates (number of crabs per trap) of European Green Crab, *Carcinus maenas*, in British Columbia, 2006 to 2013 distributional surveys.

Location	2006	2007	2008	2009	2010	2011	2012	2013
Haida Gwaii						0.00	0.00	
North Coast				0.00				
Central Coast		0.00	0.00			0.01	0.10	
Smith Sound		0.00				0.00		
NE Vancouver Island	0.00	0.00	0.00			0.00	0.00	
SE Vancouver Island	0.00	0.00						0.00
Sunshine Coast	0.00							0.00
Victoria	0.00							0.00
Lower Georgia Strait								0.00
Sooke							4.07	7.93
Barkley Sound	1.76	7.75	14.47	6.36	8.13			
Clayquot Sound	0.26	1.50			0.26			
Nootka - Esperanza	0.40	0.48		0.70	0.15			
Kyuquot Sound	0.62	0.38			10.25			
Quatsino Sound		5.89			0.44			

Table 6. Sex ratio (%) of European Green Crab, *Carcinus maenas*, from distributional surveys, 2006 to 2013. Female crabs with eggs or just released eggs are recorded separately.

Location	Male	Female	With Eggs	Released eggs
2006	**66.06%**	**33.68%**	**0.26%**	**0.00%**
Barkley Sound	61.17%	38.46%	0.37%	0.00%
Clayquot Sound	79.55%	20.45%	0.00%	0.00%
Nootka - Esperanza	80.70%	19.30%	0.00%	0.00%
Kyuquot Sound	55.56%	44.44%	0.00%	0.00%
2007	**60.86%**	**38.80%**	**0.11%**	**0.24%**
Barkley Sound	57.63%	41.89%	0.15%	0.33%
Clayquot Sound	85.71%	14.29%	0.00%	0.00%
Nootka - Esperanza	84.62%	15.38%	0.00%	0.00%
Kyuquot Sound	85.71%	14.29%	0.00%	0.00%
Quatsino Sound	68.47%	31.53%	0.00%	0.00%
2008	**56.24%**	**43.36%**	**0.21%**	**0.20%**
Barkley Sound	56.24%	43.36%	0.21%	0.20%
2009	**74.47%**	**24.15%**	**1.33%**	**0.05%**
Barkley Sound	74.48%	24.10%	1.36%	0.05%
Nootka - Esperanza	73.91%	26.09%	0.00%	0.00%
2010	**78.17%**	**21.29%**	**0.27%**	**0.27%**
Barkley Sound	79.40%	20.01%	0.31%	0.28%
Clayquot Sound	94.29%	5.71%	0.00%	0.00%
Nootka - Esperanza	72.50%	27.50%	0.00%	0.00%
Kyuquot Sound	65.85%	33.88%	0.00%	0.27%
Quatsino Sound	76.32%	23.68%	0.00%	0.00%
2011	**25.00%**	**75.00%**	**0.00%**	**0.00%**
Central Coast	25.00%	75.00%	0.00%	0.00%
2012	**38.53%**	**61.26%**	**0.22%**	**0.00%**
Central Coast	63.83%	36.17%	0.00%	0.00%
Sooke	35.66%	64.10%	0.24%	0.00%
2013	**33.97%**	**65.87%**	**0.16%**	**0.00%**
Sooke	33.97%	65.87%	0.16%	0.00%
Total	**61.72%**	**37.80%**	**0.29%**	**0.19%**

Table 7. Sex ratio (%) of European Green Crab, *Carcinus maenas* from depletion research, 2006 to 2013. Female crabs with eggs or just released eggs are recorded separately.

Year	Male	Female	With Eggs	Released eggs
2010	35.84%	64.09%	0.00%	0.07%
2011	49.59%	50.41%	0.00%	0.00%
2012	34.54%	65.42%	0.02%	0.02%
2013	46.19%	53.80%	0.00%	0.01%
Total	**42.10%**	**57.87%**	**0.01%**	**0.02%**

Table 8. Number and carapace width measured point to point of gravid female European Green Crabs, *Carcinus maenas*, 2006 to 2013, distributional surveys and depletion research.

Carapace Measurements	With Eggs	Released Eggs	Total
Number Sampled	66	46	112
Min Carapace Width	41	47	41
Max Carapace Width	76	74	76
Average Carapace Width	59	60	59

Table 9. Percentage of five crab species sampled for the distributional green crab research in British Columbia from 2006 to 2013 including Green Crab, *Carcinus maenas*, Graceful Crab, *Cancer gracilis*, Dungeness Crab, *Cancer magister*, Red Rock Crab, *Cancer productus* and Northern Kelp Crab, *Pugettia productus*.

Year	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
2006	20.50%	22.50%	5.31%	50.21%	1.47%
2007	56.47%	14.53%	16.74%	12.24%	0.01%
2008	72.67%	9.49%	10.59%	7.17%	0.07%
2009	52.19%	23.96%	16.25%	7.60%	0.00%
2010	60.38%	29.92%	3.00%	6.70%	0.00%
2011	0.11%	23.74%	47.63%	28.52%	0.00%
2012	13.76%	60.74%	9.26%	15.79%	0.45%
2013	14.79%	59.71%	15.57%	9.86%	0.08%
Total	**44.26%**	**28.56%**	**14.53%**	**12.54%**	**0.12%**

Table 10. Catch rates (number of crabs per trap) of five crab species sampled during distributional surveys, 2006 to 2013, including Green Crab, *Carcinus maenas*, Graceful Crab, *Cancer gracilis*, Dungeness Crab, *Cancer magister*, Red Rock Crab, *Cancer productus* and Northern Kelp Crab, *Pugettia productus*.

Location	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Haida Gwaii	0.00	0.14	0.74	1.27	0.00
North Coast	0.00	0.10	4.10	0.14	0.00
Central Coast	0.03	0.61	1.59	0.71	0.00
Smith Sound	0.00	0.35	2.23	0.71	0.00
NE Vancouver Island	0.00	0.96	2.52	1.40	0.00
SE Vancouver Island	0.00	3.52	0.13	2.89	0.01
Sunshine Coast	0.00	3.34	0.59	0.62	0.00
Victoria	0.00	3.32	1.24	3.47	0.06
Lower Georgia Strait	0.00	0.00	13.14	0.00	0.00
Sooke	6.44	15.14	0.41	0.33	0.06
Barkley Sound	9.03	2.04	0.07	0.40	0.01
Clayquot Sound	0.42	0.28	0.33	1.03	0.01
Nootka - Esperanza	0.32	1.10	0.33	0.20	0.00
Kyuquot Sound	3.59	0.34	0.11	0.53	0.00
Quatsino Sound	3.16	1.06	1.53	0.52	0.00
Total	**2.50**	**1.91**	**1.05**	**0.89**	**0.01**

Table 11. Number of fish, crustaceans, echinoderms, molluscs and mammals caught during Green Crab (*Carcinus maenas*) distributional surveys, 2006 to 2013.

Location	Crustaceans	Fish	Molluscs	Echinoderms	Mammals
Haida Gwaii	989	216	8	50	
North Coast	533	146		4	
Central Coast	5229	1655	286	117	1
Smith Sound	395	96	1	14	
NE Vancouver Island	2372	703	14	37	2
Quatsino Sound	1691	484	102	33	
SE Vancouver Island	4057	1259	45	4	
Sunshine Coast	1187	422		19	
Victoria	1191	125	7	7	
Lower Georgia Strait	872	60	4		
Sooke	4306	277	23	40	1
Barkley Sound	4770	715	232	64	1
Clayquot Sound	831	267	69	29	
Nootka - Esperanza	1721	609	60	70	
Kyuquot Sound	112	148	3	8	
Total Count	**30256**	**7182**	**854**	**496**	**5**
Percent	**77.99%**	**18.51%**	**2.20%**	**1.28%**	**0.01%**

FIGURES

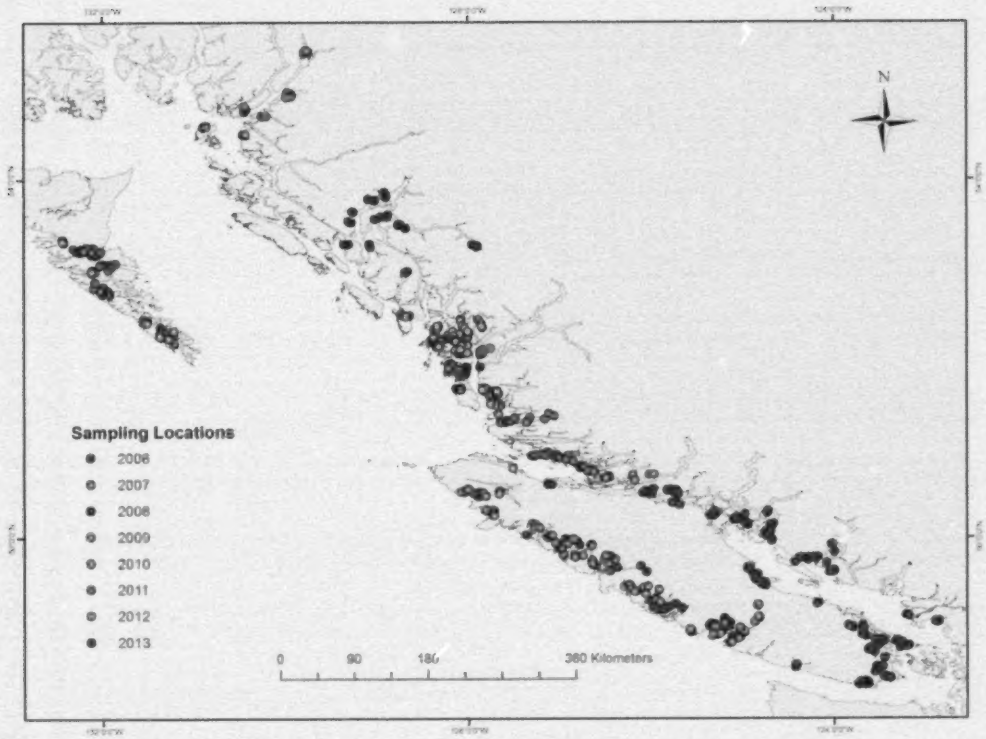


Figure 1. Sampling locations for European Green Crab distributional surveys, 2006 to 2013.

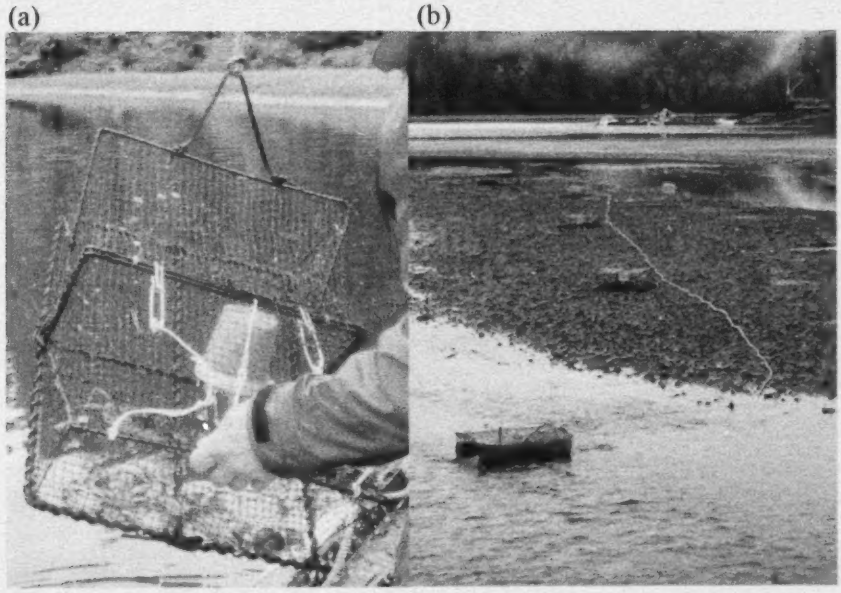


Figure 2. Fukui traps used in trap surveys. (a) Fukui trap, (b) Fukui traps deployed across the intertidal zone using a ground line.

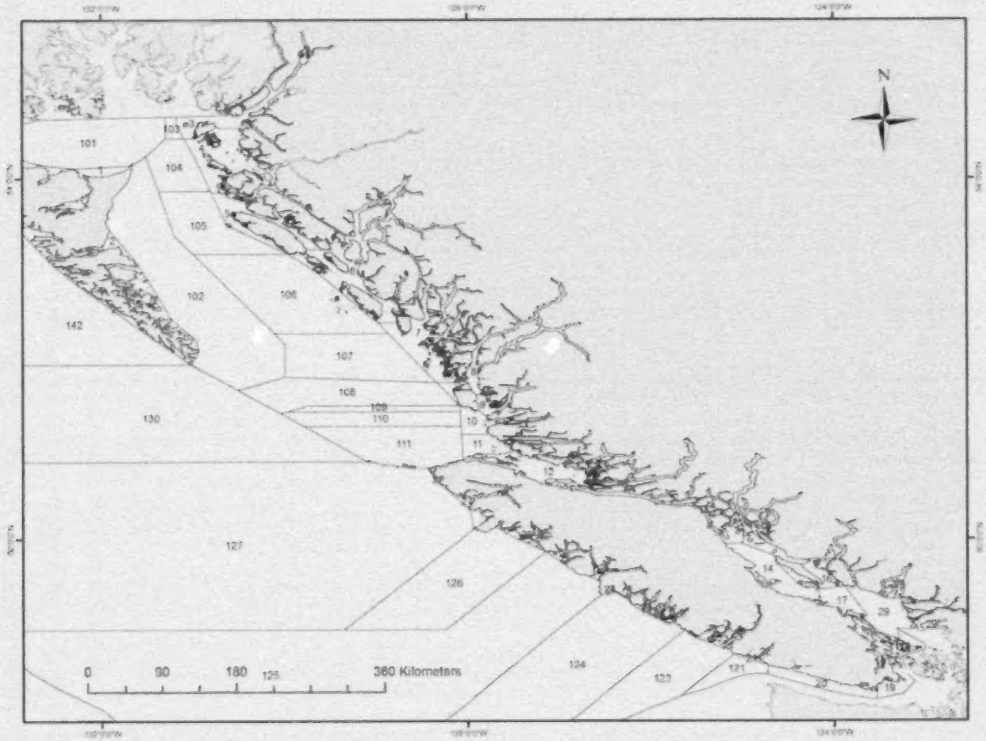


Figure 3. Pacific Fisheries Management Areas (PFMA's) along the coast of British Columbia.

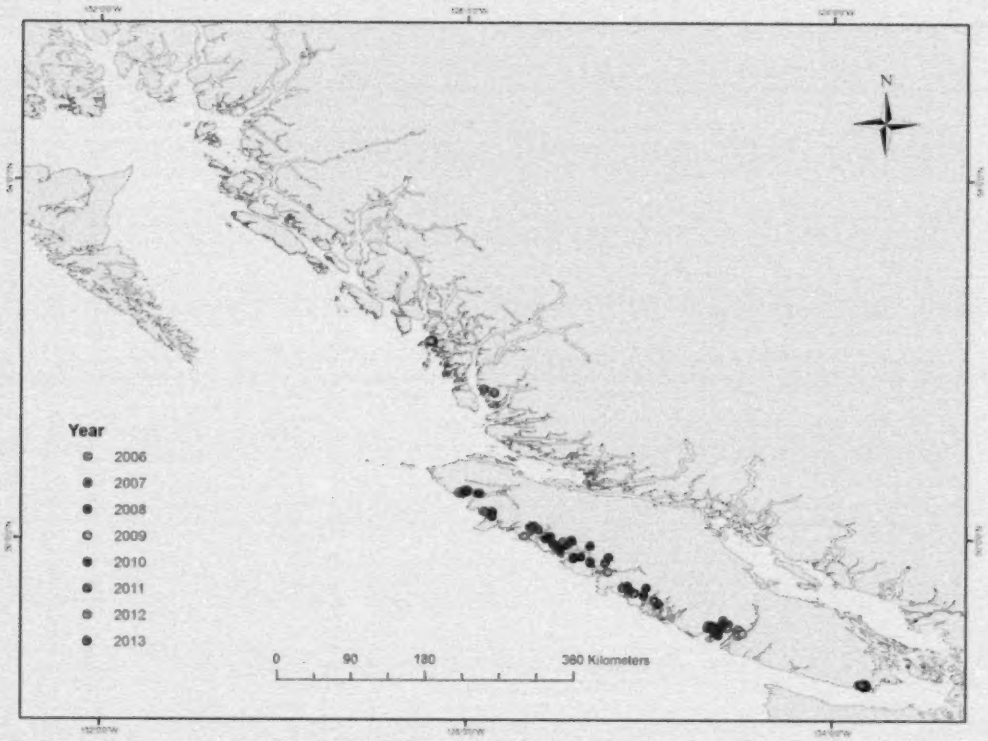


Figure 4 . Observed European Green Crab, *Carcinus maenas*, based on distribuional survey data, 2006 to 2013.

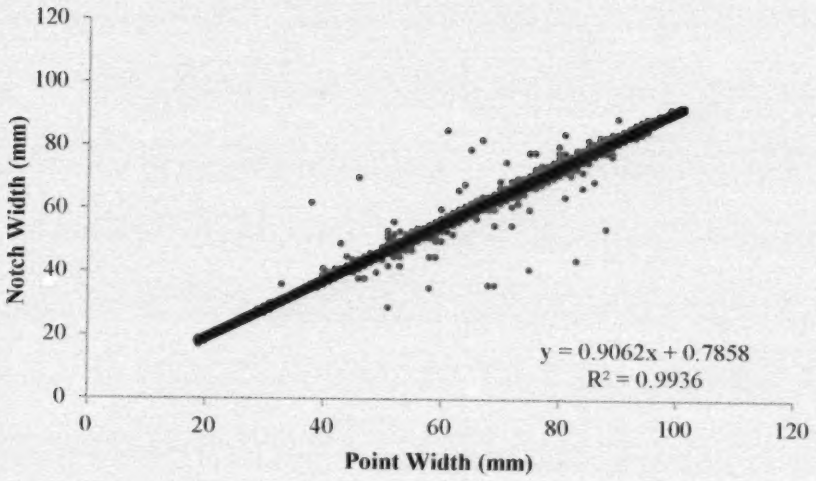
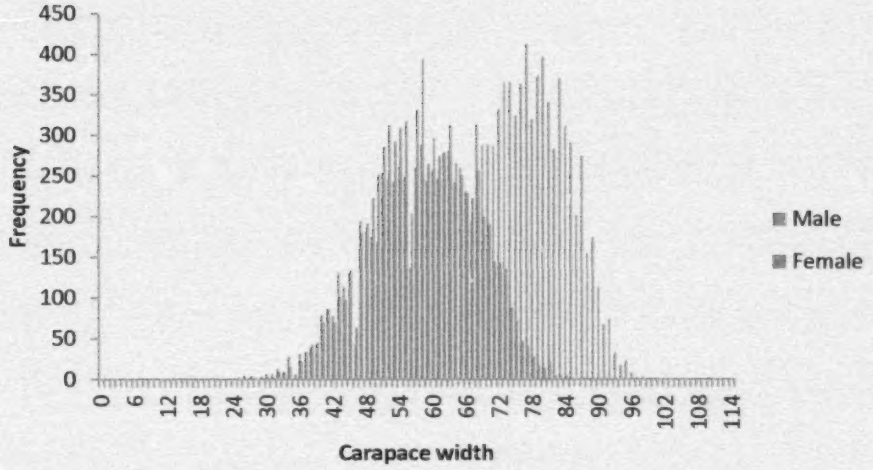


Figure 5. Regression scatter plot of European Green Crab, *Carcinus maenas*, carapace width (mm) measured notch to notch (Canadian standard measurement) to carapace width measured point to point (US standard measurement) from distributional survey and depletion research data sets, 2006 to 2013.

(a)



(b)

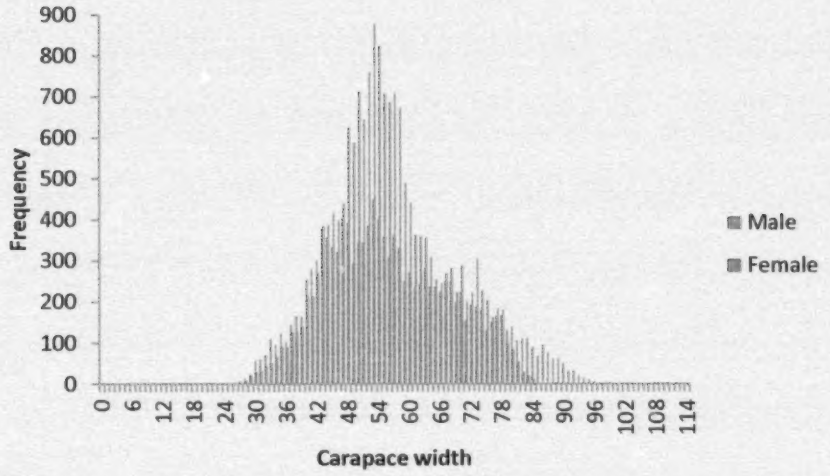


Figure 6. Carapace width (mm, point-to-point) frequency by sex of European Green Crabs, *Carcinus maenas*, all years (2006 to 2013). (a) Distributional surveys. (b) Depletion research.

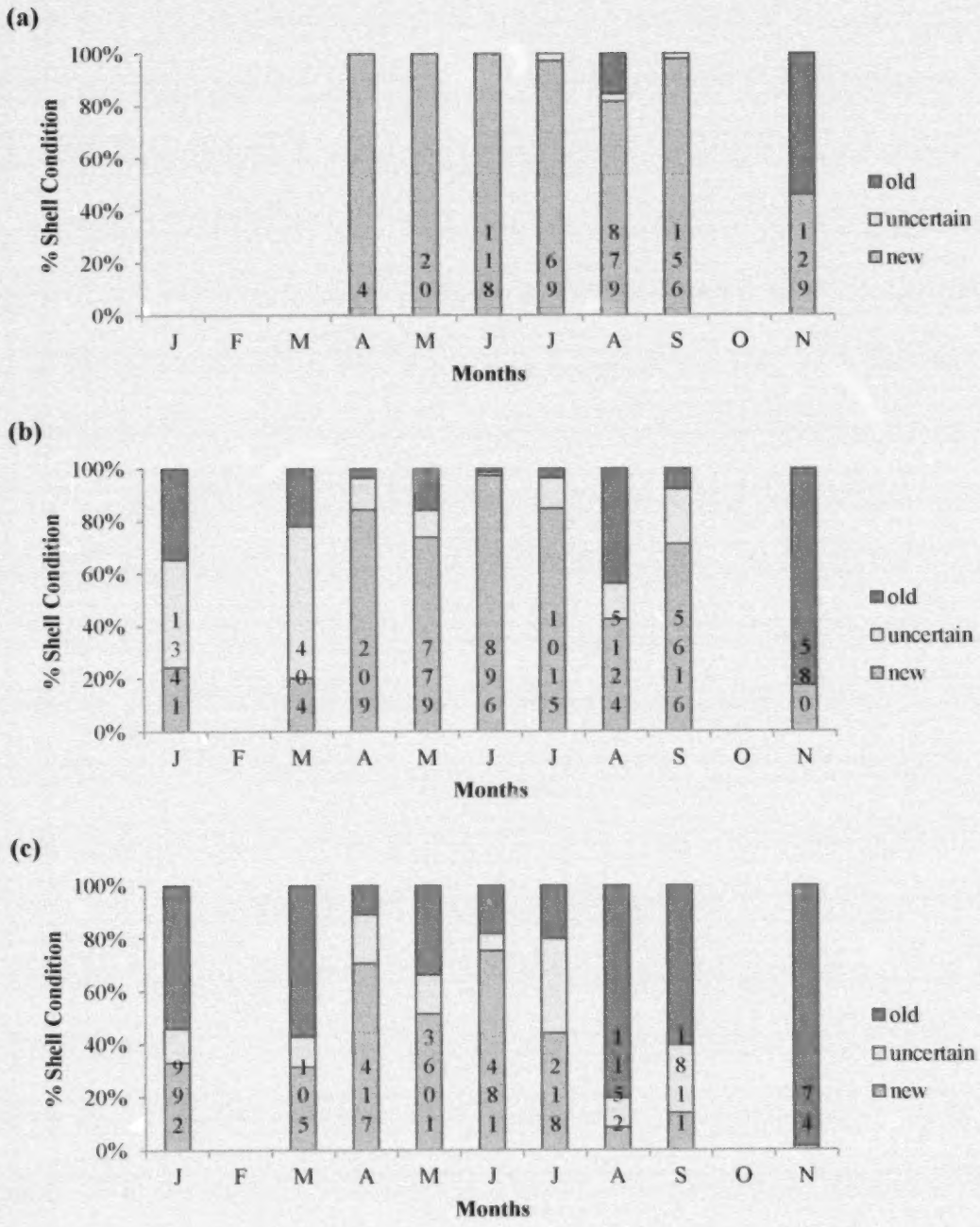


Figure 7. Percent shell condition by month for three age classes of male European Green Crabs, *Carcinus maenas*, from distributional surveys and depletion research, 2006 to 2013. There was no sampling February, October, December. The total sample size for each month is indicated. (a) Young males. (b) Mature males. (c) Older males.

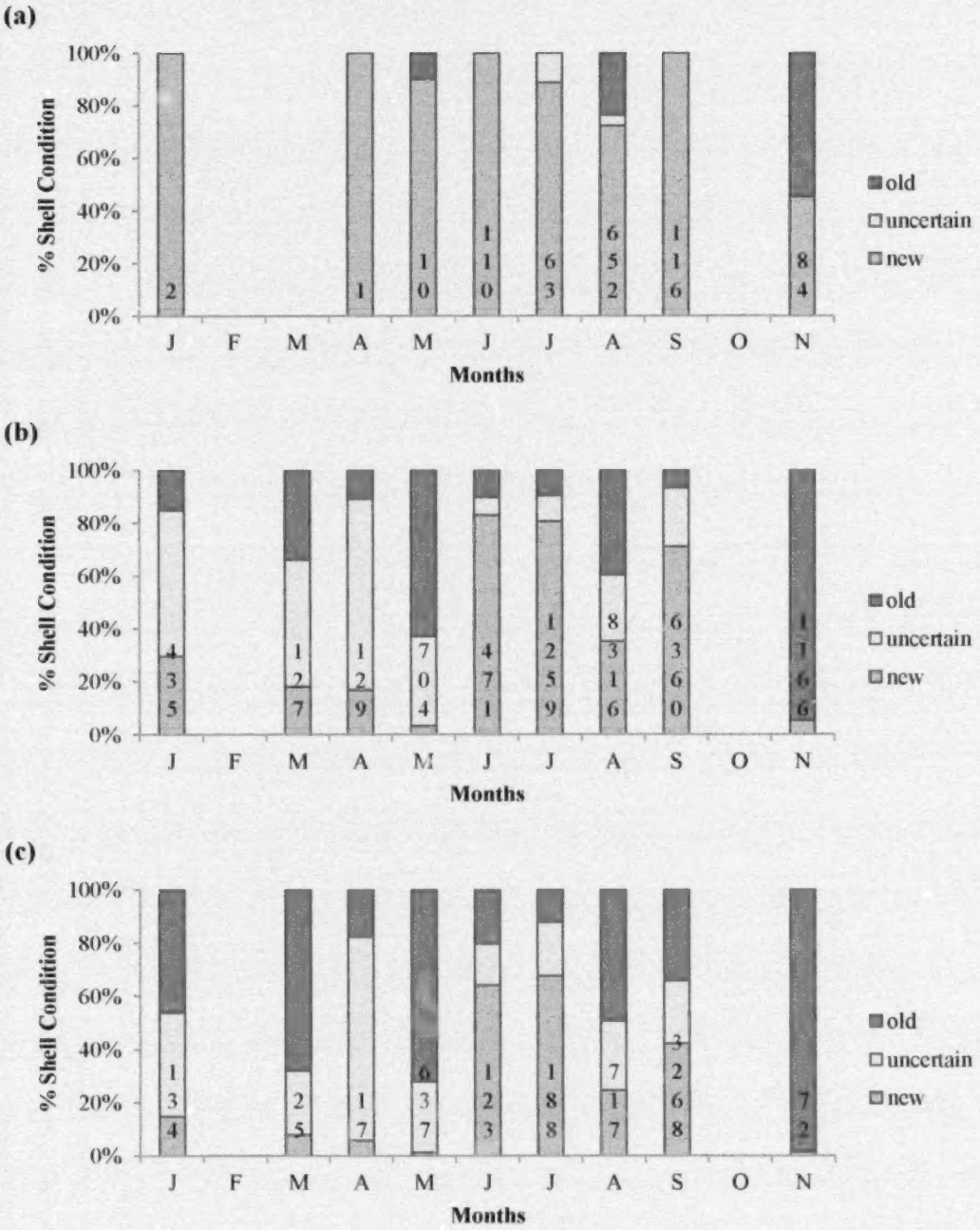


Figure 8. Percent shell condition by month for three age classes of female European Green Crabs, *Carcinus maenas*, from distributional surveys and depletion research, 2006 to 2013. There was no sampling February, October, December. The total sample size for each month is indicated. (a) Young females. (b) Mature females. (c) Older females.

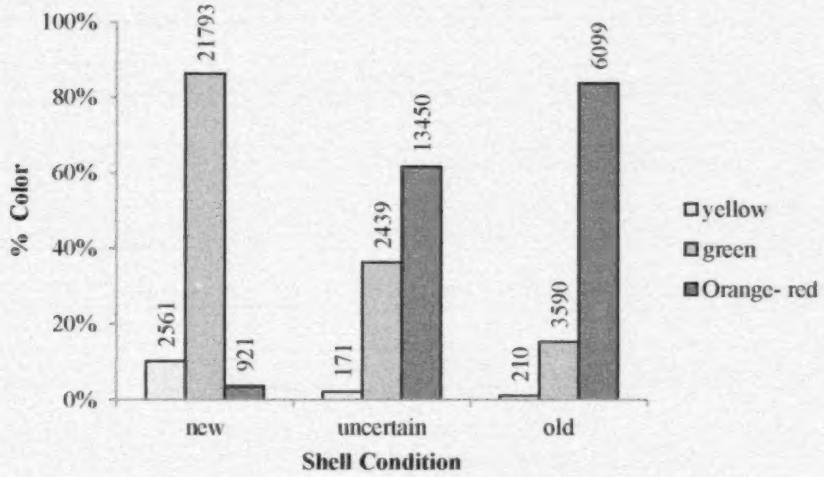
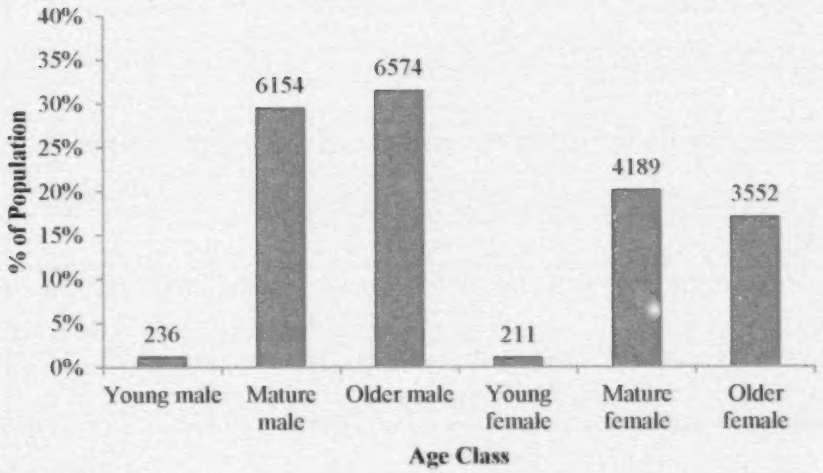


Figure 9. Shell colour (%) by shell condition for European Green Crabs, *Carcinus maenas*, collected during distributional surveys and depletion research, 2006 to 2013. Sample size is indicated.

(a)



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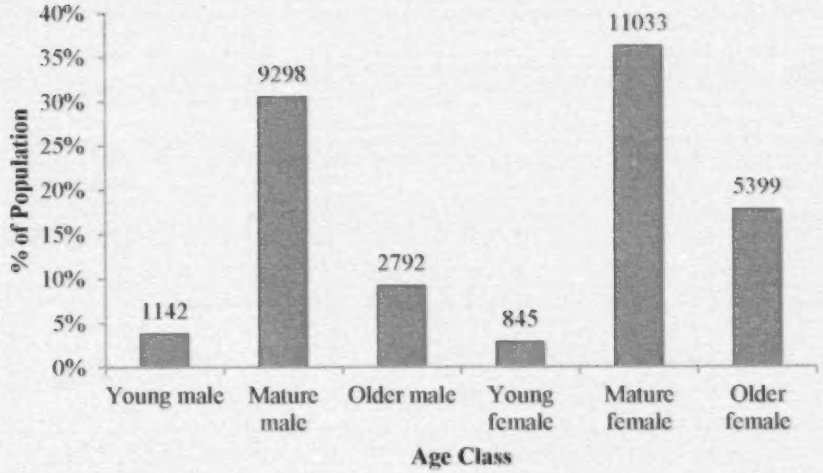


Figure 10. Age class composition (%) of European Green Crabs, *Carcinus maenas*, from (a) distributional surveys and (b) depletion research, 2006 to 2013. Sample size is indicated.

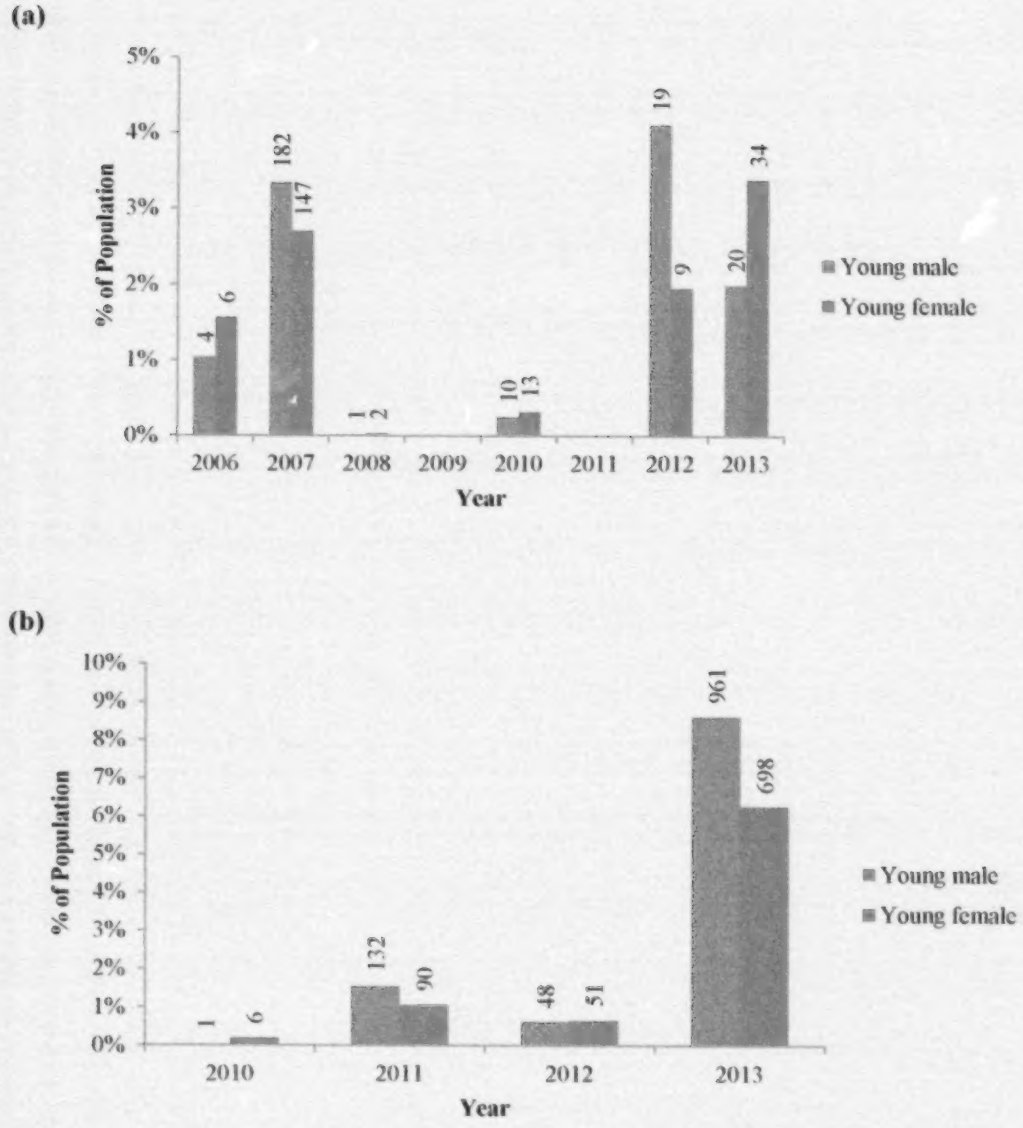


Figure 11. Recruitment (% young-of-year) for European Green Crabs, *Carcinus maenas*, from (a) distributional surveys and (b) depletion research

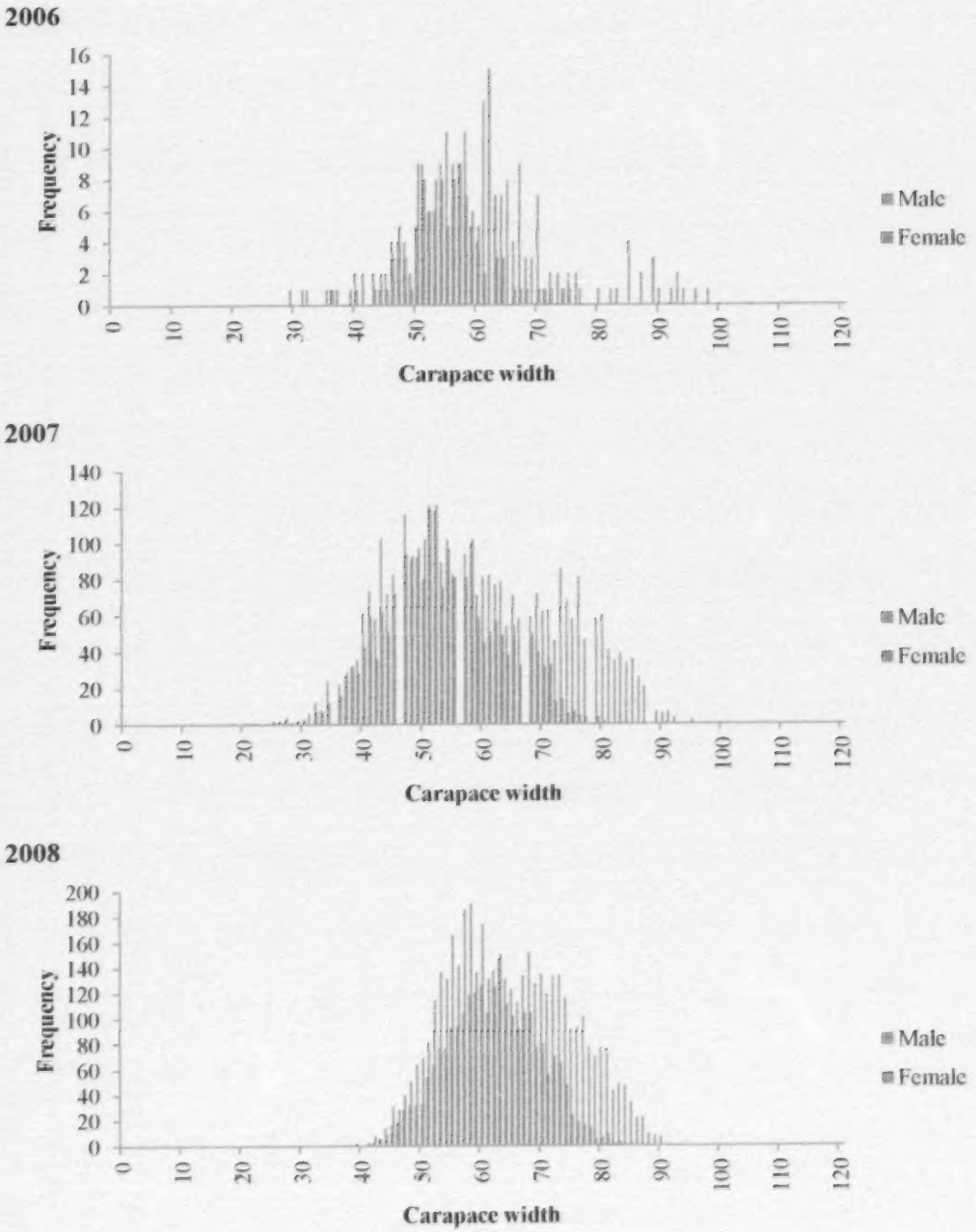
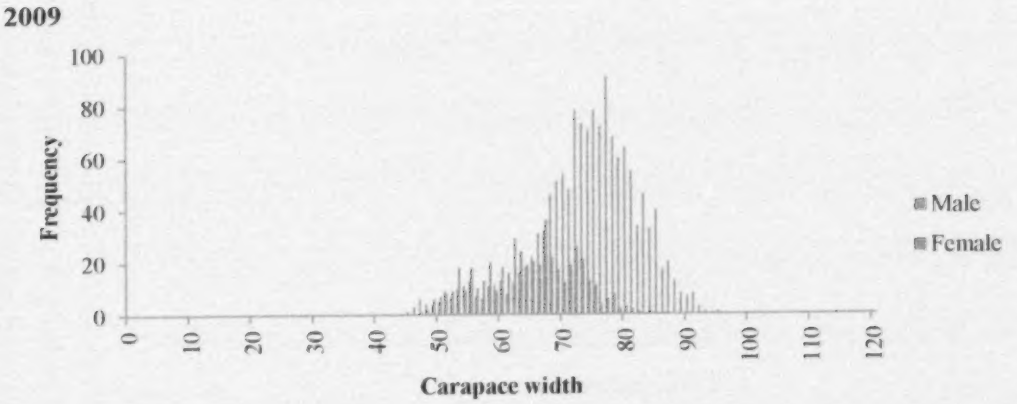
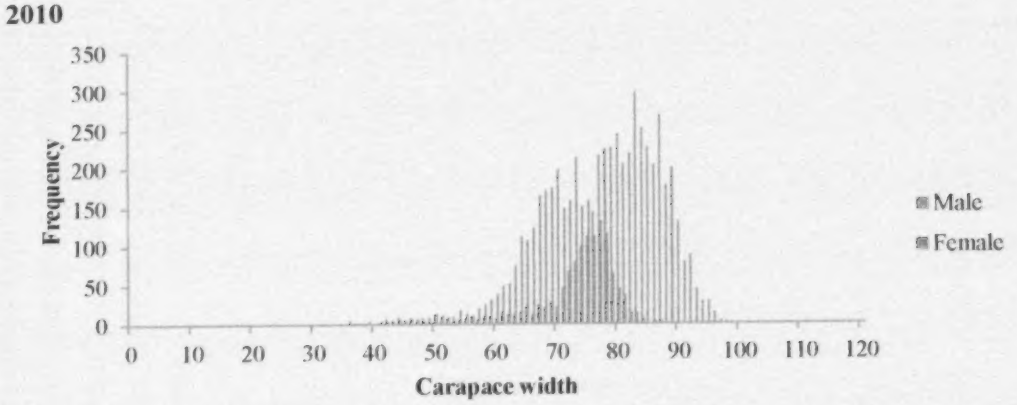


Figure 12. Carapace width (mm, point-to-point) frequency for European Green Crabs, *Carcinus maenas*, by year (2006 to 2013), distributional surveys and depletion research.





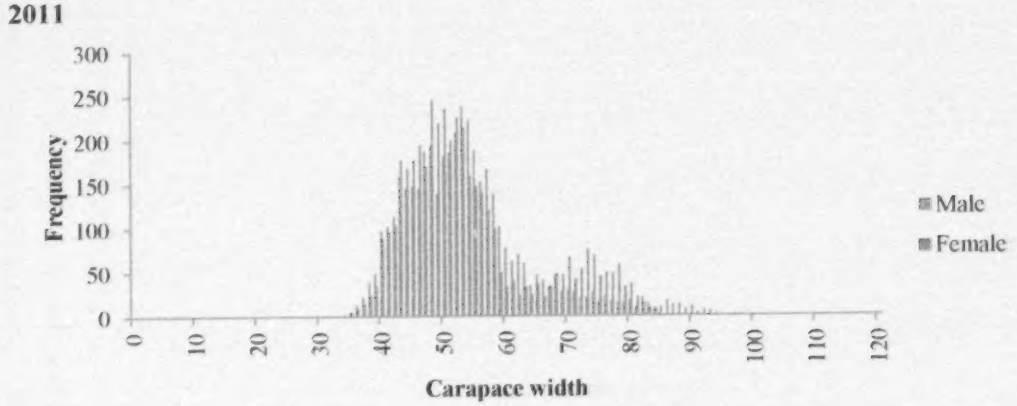
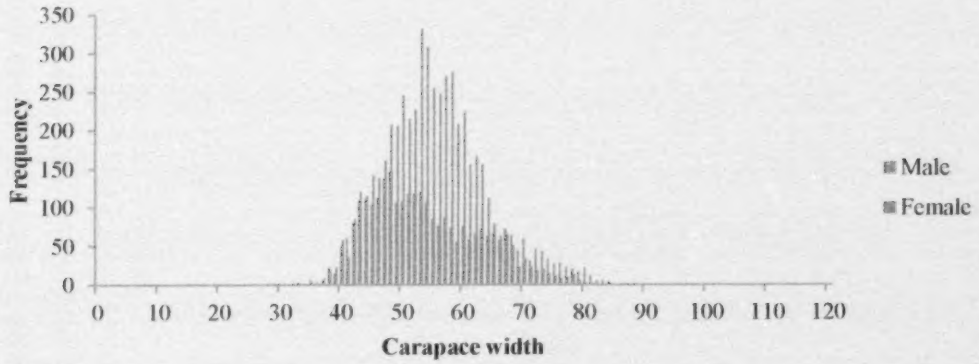


Figure 12. Continued.

2012



2013

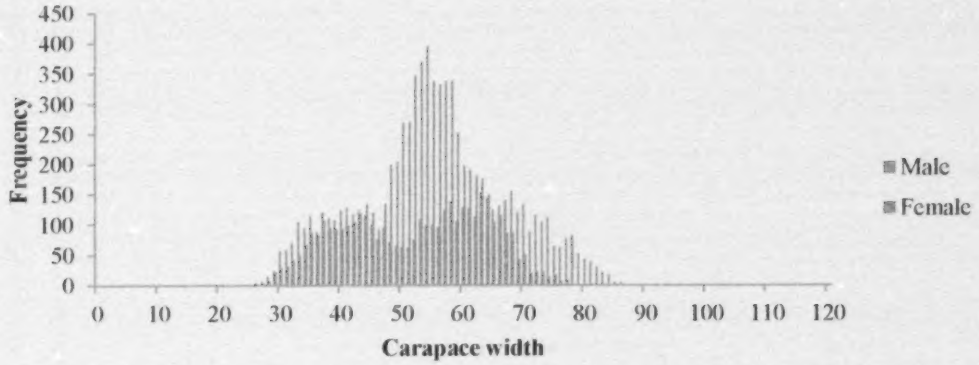


Figure 12. Continued.

APENDICES

Appendix 1. Location, haul date, set number, number of traps sampled, catch and catch rates (average crabs per trap) of European Green Crab, *Carcinus maenas*, Graceful Crab, *Cancer gracilis*, Dungeness Crab, *Cancer magister*, Red Rock Crab, *Cancer productus* and Northern Kelp Crab, *Pugettia productus*, 2006 to 2013, distributional surveys.

				Catch					Catch Rates				
Location	**Haul Date**	**Set No.**	**No. Traps**	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Useless Inlet	15/05/2006	1	12	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Useless Inlet	15/05/2006	2	6	2	8	0	0	0	0.33	1.33	0.00	0.00	0.00
Vernon Bay	15/05/2006	3	7	3	0	0	2	0	0.43	0.00	0.00	0.29	0.00
Robbers Pass	15/05/2006	4	6	0	0	2	17	2	0.00	0.00	0.33	2.83	0.33
Pipestem Inlet	16/05/2006	5	12	22	8	0	0	0	1.83	0.67	0.00	0.00	0.00
Pipestem Inlet	16/05/2006	6	12	9	0	0	0	0	0.75	0.00	0.00	0.00	0.00
Jacques Island	17/05/2006	7	12	0	9	0	2	7	0.00	0.75	0.00	0.17	0.58
Pipestem Inlet	17/05/2006	8	12	4	4	0	0	0	0.33	0.33	0.00	0.00	0.00
Pipestem Inlet	17/05/2006	9	13	11	20	0	0	0	0.85	1.54	0.00	0.00	0.00
Lemmens Inlet	25/05/2006	10	6	0	0	0	2	0	0.00	0.00	0.00	0.33	0.00
Lemmens Inlet	25/05/2006	11	12	0	6	0	15	0	0.00	0.50	0.00	1.25	0.00
Lemmens Inlet	25/05/2006	12	12	0	2	0	13	0	0.00	0.17	0.00	1.08	0.00
Lemmens Inlet	25/05/2006	13	9	0	5	0	1	0	0.00	0.56	0.00	0.11	0.00
Lemmens Inlet	26/05/2006	14	6	0	45	0	0	0	0.00	7.50	0.00	0.00	0.00
Cypress Bay	27/05/2006	15	6	0	1	0	1	0	0.00	0.17	0.00	0.17	0.00
Cypress Bay	27/05/2006	16	22	0	0	0	4	0	0.00	0.00	0.00	0.18	0.00
Mosquito Harbour	28/05/2006	17	6	0	24	0	8	0	0.00	4.00	0.00	1.33	0.00
Tranquil Inlet	28/05/2006	18	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Warn Bay	28/05/2006	19	6	0	0	0	18	0	0.00	0.00	0.00	3.00	0.00
Warn Bay	28/05/2006	20	6	0	2	1	6	0	0.00	0.33	0.17	1.00	0.00
Cypress Bay	29/05/2006	21	24	7	0	1	1	12	0.29	0.00	0.04	0.04	0.50
Coomes Bank	10/06/2006	22	6	0	0	6	18	0	0.00	0.00	1.00	3.00	0.00
Whitepine Cove	10/06/2006	23	6	0	1	2	1	0	0.00	0.17	0.33	0.17	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Whitepine Cove	10/06/2006	24	6	0	3	1	27	0	0.00	0.50	0.17	4.50	0.00
Cypress Bay	10/06/2006	25	6	0	0	0	4	0	0.00	0.00	0.00	0.67	0.00
Cypress Bay	10/06/2006	26	6	2	0	1	2	0	0.33	0.00	0.17	0.33	0.00
Whitepine Cove	11/06/2006	27	6	3	0	0	0	0	0.50	0.00	0.00	0.00	0.00
Bawden Bay	11/06/2006	28	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Elbow Bank	11/06/2006	29	5	0	0	7	13	0	0.00	0.00	1.40	2.60	0.00
Whiskey Jennny	12/06/2006	31	6	3	0	0	6	0	0.50	0.00	0.00	1.00	0.00
Whiskey Jennny	12/06/2006	32	6	11	0	0	8	0	1.83	0.00	0.00	1.33	0.00
Pretty Girl Cove	12/06/2006	33	6	12	0	0	0	0	2.00	0.00	0.00	0.00	0.00
Pretty Girl Cove	12/06/2006	34	6	5	0	0	0	0	0.83	0.00	0.00	0.00	0.00
Whitepine Bay	12/06/2006	35	6	1	0	0	0	0	0.17	0.00	0.00	0.00	0.00
Muchalat Inlet	14/06/2006	36	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Mooyah Bay	14/06/2006	37	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Mooyah Bay	14/06/2006	38	6	1	0	0	0	0	0.17	0.00	0.00	0.00	0.00
Matchlee Bay	14/06/2006	39	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Gold River	14/06/2006	40	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Barr Creek	15/06/2006	41	6	0	0	2	0	0	0.00	0.00	0.33	0.00	0.00
Zeballos	15/06/2006	42	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Zeballos	15/06/2006	43	6	1	0	0	0	0	0.17	0.00	0.00	0.00	0.00
Espinosa Inlet	16/06/2006	44	6	1	1	0	0	0	0.17	0.17	0.00	0.00	0.00
Espinosa Inlet	16/06/2006	45	6	0	3	0	3	0	0.00	0.50	0.00	0.50	0.00
Espinosa Inlet	16/06/2006	46	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Espinosa Inlet	16/06/2006	47	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Espinosa Inlet	16/06/2006	48	11	0	0	0	1	0	0.00	0.00	0.00	0.09	0.00
Espinosa Inlet	17/06/2006	49	6	1	0	1	0	0	0.17	0.00	0.17	0.00	0.00
Espinosa Inlet	17/06/2006	50	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Port Eliza	17/06/2006	51	6	0	4	0	1	0	0.00	0.67	0.00	0.17	0.00
Port Eliza	17/06/2006	52	6	0	1	0	0	0	0.00	0.17	0.00	0.00	0.00
Port Eliza	17/06/2006	53	7	16	0	0	0	0	2.29	0.00	0.00	0.00	0.00
Port Eliza	17/06/2006	54	5	7	0	4	0	0	1.40	0.00	0.80	0.00	0.00
Port Eliza	18/06/2006	55	6	5	1	1	0	0	0.83	0.17	0.17	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Port Eliza	18/06/2006	56	6	9	0	0	0	0	1.50	0.00	0.00	0.00	0.00
Port Eliza	18/06/2006	57	6	4	0	0	0	0	0.67	0.00	0.00	0.00	0.00
Port Eliza	18/06/2006	58	6	8	0	0	0	0	1.33	0.00	0.00	0.00	0.00
Port Eliza	18/06/2006	59	6	5	0	2	0	0	0.83	0.00	0.33	0.00	0.00
Kyuquot	22/06/2006	1	3	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Kyuquot	23/06/2006	2	3	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Kyuquot	24/06/2006	3	3	1	0	1	0	0	0.33	0.00	0.33	0.00	0.00
Port Neville	12/07/2006	60	6	0	0	4	5	0	0.00	0.00	0.67	0.83	0.00
Robbers Nob	12/07/2006	61	6	0	1	5	15	0	0.00	0.17	0.83	2.50	0.00
Hanatsa Point	12/07/2006	62	6	0	2	1	54	0	0.00	0.33	0.17	9.00	0.00
Port Neville	12/07/2006	63	6	0	3	17	4	0	0.00	0.50	2.83	0.67	0.00
Blenkinsop Bay	12/07/2006	64	6	0	0	2	28	0	0.00	0.00	0.33	4.67	0.00
Blenkinsop Bay	12/07/2006	65	6	0	4	8	13	0	0.00	0.67	1.33	2.17	0.00
Jackson Bay	13/07/2006	66	6	0	22	8	15	0	0.00	3.67	1.33	2.50	0.00
Read Bay	13/07/2006	67	6	0	4	15	0	0	0.00	0.67	2.50	0.00	0.00
Topaze Harbour	13/07/2006	68	6	0	1	1	0	0	0.00	0.17	0.17	0.00	0.00
Jackson Bay	13/07/2006	69	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Forward Inlet	13/07/2006	70	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Forward Inlet	13/07/2006	71	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Shorter Point	14/07/2006	72	5	0	0	2	10	0	0.00	0.00	0.40	2.00	0.00
Vere Cove	14/07/2006	73	6	0	0	0	7	0	0.00	0.00	0.00	1.17	0.00
Vere Cove	14/07/2006	74	6	0	0	0	29	0	0.00	0.00	0.00	4.83	0.00
Humpback Bay	14/07/2006	75	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Humpback Bay	14/07/2006	76	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Pipestem Inlet	17/07/2006	92	11	77	0	0	0	0	7.00	0.00	0.00	0.00	0.00
Pipestem Inlet	17/07/2006	93	7	35	0	0	0	0	5.00	0.00	0.00	0.00	0.00
Pipestem Inlet	18/07/2006	94	11	11	0	0	0	0	1.00	0.00	0.00	0.00	0.00
Pipestem Inlet	18/07/2006	95	7	13	0	0	0	0	1.86	0.00	0.00	0.00	0.00
Pipestem Inlet	19/07/2006	96	11	30	0	0	0	0	2.73	0.00	0.00	0.00	0.00
Pipestem Inlet	19/07/2006	97	7	26	0	0	0	0	3.71	0.00	0.00	0.00	0.00
Pipestem Inlet	20/07/2006	98	11	19	0	0	0	0	1.73	0.00	0.00	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Pipestem Inlet	20/07/2006	99	7	17	0	0	0	0	2.43	0.00	0.00	0.00	0.00
Kyuquot	22/07/2006	4	2	5	0	0	0	0	2.50	0.00	0.00	0.00	0.00
Lancelot Inlet	22/07/2006	77	6	0	5	0	0	0	0.00	0.83	0.00	0.00	0.00
Theodosia Cove	22/07/2006	78	6	0	45	0	8	0	0.00	7.50	0.00	1.33	0.00
Lancelot Inlet	22/07/2006	79	6	0	29	0	48	0	0.00	4.83	0.00	8.00	0.00
Okeover Inlet	22/07/2006	80	6	0	1	0	0	0	0.00	0.17	0.00	0.00	0.00
Okeover Inlet	22/07/2006	81	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Kyuquot	23/07/2006	5	2	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Prideaux Harbour	23/07/2006	82	6	0	0	0	4	0	0.00	0.00	0.00	0.67	0.00
Prideaux Harbour	23/07/2006	83	6	0	3	0	13	0	0.00	0.50	0.00	2.17	0.00
Eveleigh Island	23/07/2006	84	6	0	0	0	8	0	0.00	0.00	0.00	1.33	0.00
Pendrell Sound	23/07/2006	85	6	0	0	0	4	0	0.00	0.00	0.00	0.67	0.00
Pendrell Sound	23/07/2006	86	6	0	0	0	9	0	0.00	0.00	0.00	1.50	0.00
Kyuquot	24/07/2006	6	2	2	0	0	0	0	1.00	0.00	0.00	0.00	0.00
Von Donop Inlet	24/07/2006	87	6	0	74	0	4	0	0.00	12.33	0.00	0.67	0.00
Von Donop Inlet	24/07/2006	88	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Von Donop Inlet	24/07/2006	89	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Von Donop Inlet	24/07/2006	90	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Von Donop Inlet	24/07/2006	91	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Kyuquot	25/07/2006	7	2	1	0	0	0	0	0.50	0.00	0.00	0.00	0.00
Kanish Bay	08/09/2006	100	6	0	0	0	4	0	0.00	0.00	0.00	0.67	0.00
Kanish Bay	08/09/2006	101	6	0	20	0	3	0	0.00	3.33	0.00	0.50	0.00
Kanish Bay	08/09/2006	102	6	0	63	1	2	0	0.00	10.50	0.17	0.33	0.00
Chonat Bay	08/09/2006	103	6	0	0	0	38	0	0.00	0.00	0.00	6.33	0.00
Chonat Bay	08/09/2006	104	6	0	0	2	76	0	0.00	0.00	0.33	12.67	0.00
McKenzie Bight	20/09/2006	105	6	0	1	2	23	0	0.00	0.17	0.33	3.83	0.00
McKenzie Bight	20/09/2006	106	6	0	0	0	76	5	0.00	0.00	0.00	12.67	0.83
McKenzie Bight	20/09/2006	107	6	0	0	0	76	1	0.00	0.00	0.00	12.67	0.17
McKenzie Bight	20/09/2006	108	6	0	0	0	24	0	0.00	0.00	0.00	4.00	0.00
McKenzie Bight	20/09/2006	109	6	0	2	0	139	1	0.00	0.33	0.00	23.17	0.17
McKenzie Bight	20/09/2006	110	6	0	0	0	41	0	0.00	0.00	0.00	6.83	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Pipestem Inlet	03/04/2007	1	6	38	1	0	0	0	6.33	0.17	0.00	0.00	0.00
Pipestem Inlet	03/04/2007	2	6	32	5	3	0	0	5.33	0.83	0.50	0.00	0.00
Pipestem Inlet	03/04/2007	3	6	26	20	0	0	0	4.33	3.33	0.00	0.00	0.00
Pipestem Inlet	03/04/2007	12	6	6	0	0	0	0	1.00	0.00	0.00	0.00	0.00
Pipestem Inlet	04/04/2007	4	6	5	0	0	0	0	0.83	0.00	0.00	0.00	0.00
Pipestem Inlet	04/04/2007	5	5	19	0	0	0	0	3.80	0.00	0.00	0.00	0.00
Pipestem Inlet	04/04/2007	6	6	12	0	0	0	0	2.00	0.00	0.00	0.00	0.00
Pipestem Inlet	04/04/2007	7	6	4	0	0	0	0	0.67	0.00	0.00	0.00	0.00
Pipestem Inlet	04/04/2007	8	6	5	0	0	0	0	0.83	0.00	0.00	0.00	0.00
Pipestem Inlet	04/04/2007	9	6	11	0	0	0	0	1.83	0.00	0.00	0.00	0.00
Pipestem Inlet	04/04/2007	10	6	6	3	0	0	0	1.00	0.50	0.00	0.00	0.00
Pipestem Inlet	04/04/2007	11	6	5	3	0	0	0	0.83	0.50	0.00	0.00	0.00
Pipestem Inlet	04/04/2007	13	6	75	2	0	0	0	12.50	0.33	0.00	0.00	0.00
Pipestem Inlet	04/04/2007	14	6	40	6	0	0	0	6.67	1.00	0.00	0.00	0.00
Pipestem Inlet	04/04/2007	15	6	31	21	0	0	0	5.17	3.50	0.00	0.00	0.00
Pipestem Inlet	04/04/2007	16	6	6	17	0	0	0	1.00	2.83	0.00	0.00	0.00
Pipestem Inlet	05/04/2007	17	12	51	18	0	0	0	4.25	1.50	0.00	0.00	0.00
Pipestem Inlet	17/04/2007	102	18	99	66	0	0	0	5.50	3.67	0.00	0.00	0.00
Pipestem Inlet	18/04/2007	103	6	5	55	0	0	0	0.83	9.17	0.00	0.00	0.00
Pipestem Inlet	18/04/2007	104	6	5	0	0	0	0	0.83	0.00	0.00	0.00	0.00
Pipestem Inlet	18/04/2007	105	6	2	0	0	0	0	0.33	0.00	0.00	0.00	0.00
Pipestem Inlet	18/04/2007	106	6	5	0	0	0	0	0.83	0.00	0.00	0.00	0.00
Pipestem Inlet	18/04/2007	107	6	9	0	0	0	0	1.50	0.00	0.00	0.00	0.00
Pipestem Inlet	18/04/2007	108	6	10	1	0	0	0	1.67	0.17	0.00	0.00	0.00
Pipestem Inlet	18/04/2007	109	5	12	0	0	0	0	2.40	0.00	0.00	0.00	0.00
Pipestem Inlet	18/04/2007	110	18	63	51	0	0	0	3.50	2.83	0.00	0.00	0.00
Pipestem Inlet	19/04/2007	114	6	19	1	0	0	0	3.17	0.17	0.00	0.00	0.00
Pipestem Inlet	19/04/2007	115	6	2	0	0	0	0	0.33	0.00	0.00	0.00	0.00
Pipestem Inlet	19/04/2007	116	6	7	1	0	0	0	1.17	0.17	0.00	0.00	0.00
Pipestem Inlet	19/04/2007	117	6	4	0	0	0	0	0.67	0.00	0.00	0.00	0.00
Pipestem Inlet	19/04/2007	118	6	2	4	0	0	0	0.33	0.67	0.00	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Pipestem Inlet	19/04/2007	119	7	10	14	0	0	0	1.43	2.00	0.00	0.00	0.00
Pipestem Inlet	19/04/2007	120	18	32	10	0	0	0	1.78	0.56	0.00	0.00	0.00
Pipestem Inlet	19/04/2007	121	5	21	7	0	0	0	4.20	1.40	0.00	0.00	0.00
Joe's Bay	20/04/2007	111	6	0	0	0	6	0	0.00	0.00	0.00	1.00	0.00
Nettle Island	20/04/2007	112	6	0	0	0	25	0	0.00	0.00	0.00	4.17	0.00
Hand Island	20/04/2007	113	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Pipestem Inlet	20/04/2007	122	6	16	10	0	0	0	2.67	1.67	0.00	0.00	0.00
Pipestem Inlet	20/04/2007	123	18	45	28	0	0	0	2.50	1.56	0.00	0.00	0.00
Pipestem Inlet	20/04/2007	124	6	7	13	0	0	0	1.17	2.17	0.00	0.00	0.00
Pipestem Inlet	20/04/2007	125	18	21	38	0	0	0	1.17	2.11	0.00	0.00	0.00
Cataract Creek	20/04/2007	126	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Hillier Island	20/04/2007	127	6	3	0	0	2	0	0.50	0.00	0.00	0.33	0.00
Sargeaunt Passage	14/06/2007	1	6	0	0	50	0	0	0.00	0.00	8.33	0.00	0.00
Sargeaunt Passage	14/06/2007	2	6	0	0	66	0	0	0.00	0.00	11.00	0.00	0.00
Tsakonu Cove	14/06/2007	3	6	0	0	15	0	0	0.00	0.00	2.50	0.00	0.00
Tsakonu Cove	14/06/2007	4	6	0	0	36	0	0	0.00	0.00	6.00	0.00	0.00
Lull Bay	14/06/2007	5	6	0	0	79	0	0	0.00	0.00	13.17	0.00	0.00
Lull Bay	14/06/2007	6	6	0	0	68	0	0	0.00	0.00	11.33	0.00	0.00
Hoeya Sound	14/06/2007	7	6	0	0	54	0	0	0.00	0.00	9.00	0.00	0.00
Hoeya Sound	14/06/2007	8	6	0	0	73	0	0	0.00	0.00	12.17	0.00	0.00
Duck Cove	15/06/2007	9	6	0	0	3	0	0	0.00	0.00	0.50	0.00	0.00
Duck Cove	15/06/2007	10	6	0	0	15	0	0	0.00	0.00	2.50	0.00	0.00
Maple Cove	15/06/2007	11	6	0	0	10	0	0	0.00	0.00	1.67	0.00	0.00
Maple Cove	15/06/2007	12	6	0	0	13	0	0	0.00	0.00	2.17	0.00	0.00
Duck Cove	15/06/2007	13	6	0	0	19	0	0	0.00	0.00	3.17	0.00	0.00
Duck Cove	15/06/2007	14	6	0	0	8	0	0	0.00	0.00	1.33	0.00	0.00
Booker Lagoon	16/06/2007	15	6	0	1	7	6	0	0.00	0.17	1.17	1.00	0.00
Booker Lagoon	16/06/2007	16	6	0	28	0	0	0	0.00	4.67	0.00	0.00	0.00
Booker Lagoon	16/06/2007	17	6	0	83	11	0	0	0.00	13.83	1.83	0.00	0.00
Booker Lagoon	16/06/2007	18	6	0	71	0	1	0	0.00	11.83	0.00	0.17	0.00
Booker Lagoon	16/06/2007	19	6	0	26	4	1	0	0.00	4.33	0.67	0.17	0.00

				Catch					Catch Rates				
Location	**Haul Date**	**Set No.**	**No. Traps**	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Booker Lagoon	16/06/2007	20	6	0	9	1	4	0	0.00	1.50	0.17	0.67	0.00
Davis Bay	17/06/2007	21	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Davis Bay	17/06/2007	22	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Davis Bay	17/06/2007	23	12	0	0	1	12	0	0.00	0.00	0.08	1.00	0.00
Jennis Bay	17/06/2007	24	6	0	0	0	2	0	0.00	0.00	0.00	0.33	0.00
Tancred Bay	17/06/2007	25	6	0	0	0	34	0	0.00	0.00	0.00	5.67	0.00
Jula Island	19/06/2007	26	12	0	0	30	1	0	0.00	0.00	2.50	0.08	0.00
Robinson Island	19/06/2007	27	6	0	2	18	19	0	0.00	0.33	3.00	3.17	0.00
Gregory Islet	19/06/2007	28	6	0	0	11	0	0	0.00	0.00	1.83	0.00	0.00
Byrnes Island	19/06/2007	29	6	0	0	16	0	0	0.00	0.00	2.67	0.00	0.00
Augustine Islands	19/06/2007	30	6	0	0	9	6	0	0.00	0.00	1.50	1.00	0.00
Margaret Bay	21/06/2007	31	6	0	0	5	9	0	0.00	0.00	0.83	1.50	0.00
Margaret Bay	21/06/2007	32	6	0	0	11	13	0	0.00	0.00	1.83	2.17	0.00
Indian Island	21/06/2007	33	12	0	48	8	6	0	0.00	4.00	0.67	0.50	0.00
Anna Bay	21/06/2007	34	6	0	1	10	1	0	0.00	0.17	1.67	0.17	0.00
Sylvia Bay	21/06/2007	35	6	0	0	73	3	0	0.00	0.00	12.17	0.50	0.00
McBride Bay	21/06/2007	36	7	0	0	0	14	0	0.00	0.00	0.00	2.00	0.00
Goose Bay	22/06/2007	37	12	0	0	33	0	0	0.00	0.00	2.75	0.00	0.00
Goose Bay	22/06/2007	38	12	0	1	19	3	0	0.00	0.08	1.58	0.25	0.00
Goose Bay	22/06/2007	39	6	0	0	13	1	0	0.00	0.00	2.17	0.17	0.00
Goose Bay	22/06/2007	40	6	0	0	15	0	0	0.00	0.00	2.50	0.00	0.00
Wilson Bay	22/06/2007	41	12	0	0	13	13	0	0.00	0.00	1.08	1.08	0.00
Pierce Bay	23/06/2007	42	12	0	0	1	0	0	0.00	0.00	0.08	0.00	0.00
Finn Bay	23/06/2007	43	11	0	23	5	0	0	0.00	2.09	0.45	0.00	0.00
Frypan Bay	23/06/2007	44	11	0	3	0	1	0	0.00	0.27	0.00	0.09	0.00
Nordstrom Cove	24/06/2007	45	12	0	0	5	2	0	0.00	0.00	0.42	0.17	0.00
Koskimo Creek	24/06/2007	46	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Mahatta Creek	24/06/2007	47	6	0	0	2	23	0	0.00	0.00	0.33	3.83	0.00
Spencer Cove	24/06/2007	48	6	0	0	10	0	0	0.00	0.00	1.67	0.00	0.00
Spencer Cove	24/06/2007	49	6	4	0	1	0	0	0.67	0.00	0.17	0.00	0.00
Schloss Island	24/06/2007	50	6	0	0	0	20	0	0.00	0.00	0.00	3.33	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Monkey Creek	24/06/2007	51	18	0	7	17	1	0	0.00	0.39	0.94	0.06	0.00
Pamphlet Cove	25/06/2007	52	12	0	3	20	15	0	0.00	0.25	1.67	1.25	0.00
Drake Island	25/06/2007	53	12	0	5	99	0	0	0.00	0.42	8.25	0.00	0.00
Klootchlimmis Creek	25/06/2007	54	12	0	0	90	11	0	0.00	0.00	7.50	0.92	0.00
Spencer Cove	25/06/2007	55	12	30	0	25	1	0	2.50	0.00	2.08	0.08	0.00
Galato Creek	26/06/2007	56	12	180	0	1	0	0	15.00	0.00	0.08	0.00	0.00
Galato Creek	26/06/2007	57	6	152	3	8	0	0	25.33	0.50	1.33	0.00	0.00
Denad Creek	26/06/2007	58	12	87	0	35	0	0	7.25	0.00	2.92	0.00	0.00
Denad Creek	26/06/2007	59	6	36	0	20	0	0	6.00	0.00	3.33	0.00	0.00
Quashtin Creek	26/06/2007	60	12	26	0	16	5	0	2.17	0.00	1.33	0.42	0.00
Browning Inlet	26/06/2007	61	12	6	0	48	1	0	0.50	0.00	4.00	0.08	0.00
Denad Creek	27/06/2007	62	12	34	13	207	10	0	2.83	1.08	17.25	0.83	0.00
Denad Creek	27/06/2007	63	6	114	3	52	10	0	19.00	0.50	8.67	1.67	0.00
Galato Creek	27/06/2007	64	12	450	0	1	0	0	37.50	0.00	0.08	0.00	0.00
Galato Creek	27/06/2007	65	7	206	5	3	1	0	29.43	0.71	0.43	0.14	0.00
Klaskino Inlet	28/06/2007	66	6	28	11	0	0	0	4.67	1.83	0.00	0.00	0.00
Klaskino Inlet	28/06/2007	67	6	9	14	0	0	0	1.50	2.33	0.00	0.00	0.00
Klaskino Inlet	28/06/2007	68	6	21	29	0	0	0	3.50	4.83	0.00	0.00	0.00
Klaskino Inlet	28/06/2007	69	6	0	84	0	0	0	0.00	14.00	0.00	0.00	0.00
Klaskino Anchorage	28/06/2007	70	6	0	74	2	0	0	0.00	12.33	0.33	0.00	0.00
Klaskino Anchorage	28/06/2007	71	5	6	0	39	0	0	1.20	0.00	7.80	0.00	0.00
Easy Inlet	29/06/2007	72	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Easy Inlet	29/06/2007	73	6	1	0	0	0	0	0.17	0.00	0.00	0.00	0.00
Kashult Inlet	29/06/2007	74	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Kauwinch River	29/06/2007	75	6	5	0	4	0	0	0.83	0.00	0.67	0.00	0.00
Chamiss Point	29/06/2007	76	6	6	7	0	2	0	1.00	1.17	0.00	0.33	0.00
Hankin Cove	29/06/2007	77	7	2	0	2	0	0	0.29	0 00	0.29	0.00	0.00
Guise Creek	30/06/2007	78	12	0	0	5	8	0	0.00	0.00	0.42	0.67	0.00
Guise Creek	30/06/2007	79	6	7	21	22	0	0	1.17	3.50	3.67	0.00	0.00
Laurie Creek	30/06/2007	80	2	4	0	0	0	0	2.00	0.00	0.00	0.00	0.00
Laurie Creek	30/06/2007	82	1	1	0	0	0	0	1.00	0.00	0.00	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Valdes Bay	01/07/2007	83	6	1	17	3	0	0	0.17	2.83	0.50	0.00	0.00
Hisnit Inlet	01/07/2007	84	6	0	0	12	0	0	0.00	0.00	2.00	0.00	0.00
Nesook Bay	01/07/2007	85	6	0	0	5	0	0	0.00	0.00	0.83	0.00	0.00
Galiano Bay	01/07/2007	86	6	0	0	15	0	0	0.00	0.00	2.50	0.00	0.00
Galiano Bay	01/07/2007	87	6	0	17	15	0	0	0.00	2.83	2.50	0.00	0.00
Darr Island	02/07/2007	88	6	6	0	0	0	0	1.00	0.00	0.00	0.00	0.00
Cecilia Creek	02/07/2007	89	6	10	0	0	5	0	1.67	0.00	0.00	0.83	0.00
Bottleneck Cove	02/07/2007	90	6	0	1	0	54	0	0.00	0.17	0.00	9.00	0.00
Pretty Girl Cove	02/07/2007	91	6	7	0	1	16	0	1.17	0.00	0.17	2.67	0.00
Pretty Girl Cove	02/07/2007	92	6	17	0	0	0	0	2.83	0.00	0.00	0.00	0.00
Pretty Girl Cove	02/07/2007	93	6	13	0	0	0	0	2.17	0.00	0.00	0.00	0.00
Pretty Girl Cove	02/07/2007	94	6	10	3	3	4	0	1.67	0.50	0.50	0.67	0.00
Pipestem Inlet	03/07/2007	95	23	13	7	0	0	0	0.57	0.30	0.00	0.00	0.00
Pipestem Inlet	03/07/2007	96	7	297	0	0	0	0	42.43	0.00	0.00	0.00	0.00
Pipestem Inlet	03/07/2007	97	6	123	47	0	0	0	20.50	7.83	0.00	0.00	0.00
Pipestem Inlet	03/07/2007	98	5	161	3	0	0	0	32.20	0.60	0.00	0.00	0.00
Pipestem Inlet	03/07/2007	99	24	375	121	0	0	0	15.63	5.04	0.00	0.00	0.00
Pipestem Inlet	03/07/2007	100	6	123	0	0	0	0	20.50	0.00	0.00	0.00	0.00
Ships Point	11/09/2007	1	6	0	0	0	134	0	0.00	0.00	0.00	22.33	0.00
Ships Point	11/09/2007	2	6	0	0	0	105	0	0.00	0.00	0.00	17.50	0.00
Ships Point	11/09/2007	3	6	0	0	0	47	0	0.00	0.00	0.00	7.83	0.00
Buckley Bay	11/09/2007	4	6	0	0	0	102	0	0.00	0.00	0.00	17.00	0.00
Buckley Bay	11/09/2007	5	6	0	0	0	108	0	0.00	0.00	0.00	18.00	0.00
Buckley Bay	11/09/2007	6	6	0	0	0	101	0	0.00	0.00	0.00	16.83	0.00
Hindu Creek	11/09/2007	7	6	0	0	0	63	0	0.00	0.00	0.00	10.50	0.00
Hindu Creek	11/09/2007	8	6	0	0	0	62	1	0.00	0.00	0.00	10.33	0.17
Hindu Creek	11/09/2007	9	6	0	0	0	86	0	0.00	0.00	0.00	14.33	0.00
Pipestem Inlet	18/09/2007	1	18	870	123	0	0	0	48.33	6.83	0.00	0.00	0.00
Pipestem Inlet	18/09/2007	2	6	75	0	0	0	0	12.50	0.00	0.00	0.00	0.00
Pipestem Inlet	18/09/2007	3	6	50	0	0	0	0	8.33	0.00	0.00	0.00	0.00
Pipestem Inlet	18/09/2007	4	6	92	0	0	0	0	15.33	0.00	0.00	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Pipestem Inlet	18/09/2007	5	6	52	0	0	0	0	8.67	0.00	0.00	0.00	0.00
Pipestem Inlet	18/09/2007	6	6	14	0	0	0	0	2.33	0.00	0.00	0.00	0.00
Pipestem Inlet	18/09/2007	7	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Pipestem Inlet	18/09/2007	8	6	108	70	0	0	0	18.00	11.67	0.00	0.00	0.00
Pipestem Inlet	19/09/2007	9	6	736	0	0	0	0	122.67	0.00	0.00	0.00	0.00
Pipestem Inlet	19/09/2007	10	6	52	23	0	0	0	8.67	3.83	0.00	0.00	0.00
Pipestem Inlet	19/09/2007	11	6	21	0	0	0	0	3.50	0.00	0.00	0.00	0.00
Pipestem Inlet	19/09/2007	12	6	7	0	0	0	0	1.17	0.00	0.00	0.00	0.00
Pipestem Inlet	19/09/2007	13	6	15	0	0	0	0	2.50	0.00	0.00	0.00	0.00
Toquart Bay	26/01/2008	1	6	1	4	2	1	0	0.17	0.67	0.33	0.17	0.00
Pipestem Inlet	27/01/2008	2	18	581	56	0	0	0	32.28	3.11	0.00	0.00	0.00
Pipestem Inlet	27/01/2008	3	6	146	0	0	0	0	24.33	0.00	0.00	0.00	0.00
Pipestem Inlet	27/01/2008	4	6	146	0	0	0	0	24.33	0.00	0.00	0.00	0.00
Sechart Channel	28/01/2008	5	6	0	0	0	18	0	0.00	0.00	0.00	3.00	0.00
Sechart Channel	28/01/2008	6	6	0	0	0	17	0	0.00	0.00	0.00	2.83	0.00
Pipestem Inlet	28/01/2008	7	18	289	31	0	0	0	16.06	1.72	0.00	0.00	0.00
Pipestem Inlet	28/01/2008	8	6	230	0	0	0	0	38.33	0.00	0.00	0.00	0.00
Cigarette Cove	29/01/2008	9	6	11	0	0	1	0	1.83	0.00	0.00	0.17	0.00
Entrance Inlet	29/01/2008	10	6	35	0	0	1	0	5.83	0.00	0.00	0.17	0.00
Mayne Bay	29/01/2008	11	6	0	0	0	47	0	0.00	0.00	0.00	7.83	0.00
Julia Passage	30/01/2008	12	12	0	0	1	18	0	0.00	0.00	0.08	1.50	0.00
Canoe Island	30/01/2008	13	6	7	0	0	20	0	1.17	0.00	0.00	3.33	0.00
Canoe Island	30/01/2008	14	6	0	0	0	38	0	0.00	0.00	0.00	6.33	0.00
Harris Point	30/01/2008	15	6	0	12	0	7	0	0.00	2.00	0.00	1.17	0.00
Bazett Island	30/01/2008	16	6	3	9	2	0	0	0.50	1.50	0.33	0.00	0.00
Lucky Creek	30/01/2008	17	6	1	0	0	0	0	0.17	0.00	0.00	0.00	0.00
Lucky Creek	30/01/2008	18	6	22	1	0	0	0	3.67	0.17	0.00	0.00	0.00
Lucky Creek	30/01/2008	19	6	11	0	0	1	0	1.83	0.00	0.00	0.17	0.00
Pinkerton Islands	31/01/2008	20	6	0	0	0	0	3	0.00	0.00	0.00	0.00	0.50
Pinkerton Islands	31/01/2008	21	6	10	0	1	0	0	1.67	0.00	0.17	0.00	0.00
Pinkerton Islands	31/01/2008	22	6	1	0	0	0	0	0.17	0.00	0.00	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Mayne Bay	31/01/2008	23	6	8	0	0	5	2	1.33	0.00	0.00	0.83	0.33
Cataract Creek	31/01/2008	24	6	14	3	0	0	0	2.33	0.50	0.00	0.00	0.00
Hillier Island	31/01/2008	25	6	45	0	0	0	0	7.50	0.00	0.00	0.00	0.00
Toquart Bay	31/01/2008	26	6	4	1	0	13	0	0.67	0.17	0.00	2.17	0.00
Toquart Bay	31/01/2008	27	6	35	0	0	3	0	5.83	0.00	0.00	0.50	0.00
Toquart Bay	31/01/2008	28	6	1	0	0	27	0	0.17	0.00	0.00	4.50	0.00
Pipestem Inlet	13/03/2008	1	18	474	21	0	0	0	26.33	1.17	0.00	0.00	0.00
Pipestem Inlet	13/03/2008	2	6	18	0	0	0	0	3.00	0.00	0.00	0.00	0.00
Pipestem Inlet	13/03/2008	3	6	84	0	0	0	0	14.00	0.00	0.00	0.00	0.00
Pipestem Inlet	13/03/2008	4	6	86	3	0	0	0	14.33	0.50	0.00	0.00	0.00
Effingham Inlet	12/05/2008	1	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Effingham Inlet	12/05/2008	2	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Effingham Inlet	12/05/2008	3	6	2	14	0	0	0	0.33	2.33	0.00	0.00	0.00
Effingham Inlet	12/05/2008	4	6	1	0	0	0	0	0.17	0.00	0.00	0.00	0.00
Effingham Inlet	12/05/2008	5	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Pipestem Inlet	12/05/2008	7	6	0	8	0	0	0	0.00	1.33	0.00	0.00	0.00
Pipestem Inlet	13/05/2008	6	18	289	117	0	0	0	16.06	6.50	0.00	0.00	0.00
Pipestem Inlet	13/05/2008	8	6	248	0	0	0	0	41.33	0.00	0.00	0.00	0.00
Pipestem Inlet	13/05/2008	9	6	185	93	0	0	0	30.83	15.50	0.00	0.00	0.00
Pipestem Inlet	13/05/2008	10	6	224	3	0	0	0	37.33	0.50	0.00	0.00	0.00
Pipestem Inlet	13/05/2008	11	6	17	59	11	0	0	2.83	9.83	1.83	0.00	0.00
Pipestem Inlet	13/05/2008	12	6	60	3	0	0	0	10.00	0.50	0.00	0.00	0.00
Pipestem Inlet	14/05/2008	13	18	306	100	0	0	0	17.00	5.56	0.00	0.00	0.00
Pipestem Inlet	14/05/2008	14	6	105	27	0	0	0	17.50	4.50	0.00	0.00	0.00
Pipestem Inlet	14/05/2008	15	6	151	22	0	0	0	25.17	3.67	0.00	0.00	0.00
Pipestem Inlet	14/05/2008	16	6	165	5	0	0	0	27.50	0.83	0.00	0.00	0.00
Fish Trap Inlet	29/05/2008	3	6	0	1	0	4	0	0.00	0.17	0.00	0.67	0.00
Waterfall Inlet	29/05/2008	4	6	0	0	0	9	0	0.00	0.00	0.00	1.50	0.00
McClusky Inlet	29/05/2008	5	6	0	0	4	0	0	0.00	0.00	0.67	0.00	0.00
Gildersleeve Bay	29/05/2008	6	6	0	0	0	5	0	0.00	0.00	0.00	0.83	0.00
Man Trap Inlet	29/05/2008	7	6	0	0	0	13	0	0.00	0.00	0.00	2.17	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Illahie Inlet	29/05/2008	8	6	0	3	0	6	0	0.00	0.50	0.00	1.00	0.00
Kildidt Narrows	30/05/2008	10	6	0	0	2	2	0	0.00	0.00	0.33	0.33	0.00
Spitfire Channel	30/05/2008	11	12	0	20	3	0	1	0.00	1.67	0.25	0.00	0.08
Hurricane Island	30/05/2008	12	6	0	11	0	0	0	0.00	1.83	0.00	0.00	0.00
Hurricane Island	30/05/2008	13	6	0	5	0	0	0	0.00	0.83	0.00	0.00	0.00
Kiltik Cove	31/05/2008	14	6	0	0	13	0	0	0.00	.00	2.17	0.00	0.00
Kiltik Cove	31/05/2008	15	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Crab Cove	31/05/2008	16	6	0	0	13	4	0	0.00	0.00	2.17	0.67	0.00
Crab Cove	31/05/2008	17	4	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Target Bay	31/05/2008	18	6	0	0	1	2	0	0.00	0.00	0.17	0.33	0.00
Hupman Bay	31/05/2008	19	6	0	0	3	3	0	0.00	0.00	0.50	0.50	0.00
Edmonds Point	31/05/2008	20	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Codville Lagoon	31/05/2008	21	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Codville Lagoon	01/06/2008	22	6	0	1	0	12	0	0.00	0.17	0.00	2.00	0.00
Evans Inlet	01/06/2008	23	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Evans Inlet	01/06/2008	24	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Evans Inlet	01/06/2008	25	6	0	0	35	0	0	0.00	0.00	5.83	0.00	0.00
Evans Inlet	01/06/2008	26	6	0	0	11	0	0	0.00	0.00	1.83	0.00	0.00
Kakushdish Harbour	02/06/2008	30	6	0	20	0	0	0	0.00	3.33	0.00	0.00	0.00
Kunsoot River	02/06/2008	31	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Kakushdish Harbour	02/06/2008	32	6	0	0	2	0	0	0.00	0.00	0.33	0.00	0.00
Kakushdish Harbour	02/06/2008	33	6	0	3	0	0	0	0.00	0.50	0.00	0.00	0.00
Gullchuks	02/06/2008	34	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Gullchuks	02/06/2008	35	6	0	0	0	2	0	0.00	0.00	0.00	0.33	0.00
Troup Narrows	03/06/2008	39	6	0	0	2	0	0	0.00	0.00	0.33	0.00	0.00
Troup Narrows	03/06/2008	40	6	0	1	1	0	0	0.00	0.17	0.17	0.00	0.00
Troup Narrows	03/06/2008	41	6	0	0	10	0	0	0.00	0.00	1.67	0.00	0.00
Troup Narrows	03/06/2008	42	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Troup Narrows	03/06/2008	43	6	0	0	8	0	0	0.00	0.00	1.33	0.00	0.00
Discovery Bay	03/06/2008	44	6	0	0	13	0	0	0.00	0.00	2.17	0.00	0.00
Discovery Bay	03/06/2008	45	6	0	0	10	0	0	0.00	0.00	1.67	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Passage Cove	04/06/2008	46	6	0	0	1	4	0	0.00	0.00	0.17	0.67	0.00
Oliver Cove	04/06/2008	47	6	0	0	8	0	0	0.00	0.00	1.33	0.00	0.00
Oliver Cove	04/06/2008	48	6	0	0	6	5	0	0.00	0.00	1.00	0.83	0.00
Lambard Inlet	04/06/2008	49	6	0	3	1	29	0	0.00	0.50	0.17	4.83	0.00
Lambard Inlet	04/06/2008	50	6	0	1	51	0	0	0.00	0.17	8.50	0.00	0.00
Lambard Inlet	04/06/2008	51	6	0	3	1	0	0	0.00	0.50	0.17	0.00	0.00
Lambard Inlet	04/06/2008	52	6	0	0	11	1	0	0.00	0.00	1.83	0.17	0.00
Arnoup Creek	05/06/2008	55	6	0	0	4	0	0	0.00	0.00	0.67	0.00	0.00
Arnoup Creek	05/06/2008	56	6	0	0	10	0	0	0.00	0.00	1.67	0.00	0.00
Arnoup Creek	05/06/2008	57	6	0	0	3	0	0	0.00	0.00	0.50	0.00	0.00
Brew Creek	05/06/2008	58	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Peatt Creek	05/06/2008	59	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Peatt Creek	05/06/2008	60	6	0	0	2	0	0	0.00	0.00	0.33	0.00	0.00
Gale Passage	08/06/2008	63	6	0	0	0	18	0	0.00	0.00	0.00	3.00	0.00
Gale Passage	08/06/2008	64	6	0	1	1	0	0	0.00	0.17	0.17	0.00	0.00
Gale Passage	08/06/2008	65	6	0	39	0	8	0	0.00	6.50	0.00	1.33	0.00
Gale Passage	08/06/2008	66	6	0	0	0	12	0	0.00	0.00	0.00	2.00	0.00
Gale Passage	08/06/2008	67	6	0	0	0	34	0	0.00	0.00	0.00	5.67	0.00
Lizzie Cove	09/06/2008	69	6	0	0	1	1	0	0.00	0.00	0.17	0.17	0.00
Fannie Cove	09/06/2008	70	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Jane Cove	09/06/2008	71	6	0	0	6	10	0	0.00	0.00	1.00	1.67	0.00
Ada Cove	09/06/2008	72	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Fancy Cove	09/06/2008	73	6	0	4	2	1	0	0.00	0.67	0.33	0.17	0.00
Fancy Cove	09/06/2008	74	6	0	39	0	19	0	0.00	6.50	0.00	3.17	0.00
Kiskosh Inlet	17/07/2008	1	6	0	0	8	0	0	0.00	0.00	1.33	0.00	0.00
Kiskosh Inlet	17/07/2008	2	6	0	0	45	0	0	0.00	0.00	7.50	0.00	0.00
Kiskosh Inlet	17/07/2008	3	6	0	0	6	0	0	0.00	0.00	1.00	0.00	0.00
Gamble Creek	17/07/2008	4	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Kitkiata Inlet	17/07/2008	5	6	0	0	5	0	0	0.00	0.00	0.83	0.00	0.00
Kitkiata Inlet	17/07/2008	6	6	0	0	28	0	0	0.00	0.00	4.67	0.00	0.00
Kitkiata Inlet	17/07/2008	11	3	0	0	149	0	0	0.00	0.00	49.67	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Foch Lagoon	18/07/2008	14	6	0	0	23	0	0	0.00	0.00	3.83	0.00	0.00
Foch Lagoon	18/07/2008	15	6	0	0	10	0	0	0.00	0.00	1.67	0.00	0.00
Foch Lagoon	18/07/2008	16	6	0	0	4	0	0	0.00	0.00	0.67	0.00	0.00
Hilton Point	18/07/2008	17	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Hilton Point	18/07/2008	18	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Miskatla Inlet	18/07/2008	19	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Kitsaway Island	19/07/2008	20	6	0	0	14	0	0	0.00	0.00	2.33	0.00	0.00
Kitsaway Island	19/07/2008	21	6	0	0	31	0	0	0.00	0.00	5.17	0.00	0.00
Kitsaway Island	19/07/2008	22	6	0	0	7	0	0	0.00	0.00	1.17	0.00	0.00
Kitsaway Island	19/07/2008	23	6	0	0	37	0	0	0.00	0.00	6.17	0.00	0.00
Dunube Bay	19/07/2008	24	6	0	0	35	0	0	0.00	0.00	5.83	0.00	0.00
Fishtrap Bay	19/07/2008	25	6	0	0	18	0	0	0.00	0.00	3.00	0.00	0.00
Price Cove	20/07/2008	29	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Price Cove	20/07/2008	30	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Joy Creek	20/07/2008	31	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Icy Creek	20/07/2008	32	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Kitlope Inlet	20/07/2008	33	3	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Kitlope Inlet	20/07/2008	35	3	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Triumph Bay	21/07/2008	38	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Triumph Bay	21/07/2008	39	6	0	0	17	0	0	0.00	0.00	2.83	0.00	0.00
Ochwe Bay	21/07/2008	40	6	0	0	8	0	0	0.00	0.00	1.33	0.00	0.00
Ochwe Bay	21/07/2008	41	6	0	0	4	0	0	0.00	0.00	0.67	0.00	0.00
Paril River	21/07/2008	42	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Paril River	21/07/2008	43	6	0	0	38	0	0	0.00	0.00	6.33	0.00	0.00
Home Bay	22/07/2008	47	6	0	0	50	2	0	0.00	0.00	8.33	0.33	0.00
Home Bay	22/07/2008	48	6	0	0	37	4	0	0.00	0.00	6.17	0.67	0.00
Whalen Creek	22/07/2008	49	6	0	0	13	36	0	0.00	0.00	2.17	6.00	0.00
Whalen Creek	22/07/2008	50	6	0	0	13	51	0	0.00	0.00	2.17	8.50	0.00
Hawk Bay	23/07/2008	57	6	0	0	8	4	0	0.00	0.00	1.33	0.67	0.00
Hawk Bay	23/07/2008	58	6	0	1	7	9	0	0.00	0.17	1.17	1.50	0.00
Hawk Bay	23/07/2008	59	6	0	0	4	52	0	0.00	0.00	0.67	8.67	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Hawk Bay	23/07/2008	60	6	0	0	8	80	1	0.00	0.00	1.33	13.33	0.17
Curew Bay	23/07/2008	61	6	0	0	52	3	0	0.00	0.00	8.67	0.50	0.00
Curew Bay	23/07/2008	62	6	0	0	44	1	0	0.00	0.00	7.33	0.17	0.00
Port McNeill	16/09/2008	1	6	0	0	26	0	0	0.00	0.00	4.33	0.00	0.00
Port McNeill	16/09/2008	2	6	0	0	46	2	0	0.00	0.00	7.67	0.33	0.00
Mills Creek	16/09/2008	3	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Mills Creek	16/09/2008	4	6	0	0	6	0	0	0.00	0.00	1.00	0.00	0.00
Mills Creek	16/09/2008	5	6	0	1	33	20	0	0.00	0.17	5.50	3.33	0.00
Port McNeill	16/09/2008	6	6	0	0	4	22	0	0.00	0.00	0.67	3.67	0.00
Port McNeill	16/09/2008	7	6	0	0	1	1	0	0.00	0.00	0.17	0.17	0.00
Port McNeill	16/09/2008	8	6	0	0	0	30	0	0.00	0.00	0.00	5.00	0.00
Port McNeill	16/09/2008	9	6	0	2	11	16	0	0.00	0.33	1.83	2.67	0.00
Toquart River	23/09/2008	1	6	100	0	0	0	0	16.67	0.00	0.00	0.00	0.00
Hillier Island	23/09/2008	2	6	186	1	0	1	0	31.00	0.17	0.00	0.17	0.00
Hillier Island	23/09/2008	3	6	110	2	0	0	0	18.33	0.33	0.00	0.00	0.00
Lucky Creek	23/09/2008	4	6	126	19	3	1	0	21.00	3.17	0.50	0.17	0.00
Cataract Creek	23/09/2008	5	6	13	0	0	0	0	2.17	0.00	0.00	0.00	0.00
Pipestem Inlet	23/09/2008	7	16	758	25	0	0	0	47.38	1.56	0.00	0.00	0.00
Pipestem Inlet	24/09/2008	6	6	299	0	0	0	0	49.83	0.00	0.00	0.00	0.00
Pipestem Inlet	24/09/2008	9	6	177	1	0	0	0	29.50	0.17	0.00	0.00	0.00
Pipestem Inlet	24/09/2008	11	12	614	10	0	0	0	51.17	0.83	0.00	0.00	0.00
Pipestem Inlet	24/09/2008	12	6	49	99	0	0	0	8.17	16.50	0.00	0.00	0.00
Pipestem Inlet	25/09/2008	8	2	28	57	0	0	0	14.00	28.50	0.00	0.00	0.00
Pipestem Inlet	25/09/2008	10	6	214	30	0	0	0	35.67	5.00	0.00	0.00	0.00
Pipestem Inlet	25/09/2008	13	6	11	0	0	0	0	1.83	0.00	0.00	0.00	0.00
Pipestem Inlet	25/09/2008	14	6	14	0	0	0	0	2.33	0.00	0.00	0.00	0.00
Pipestem Inlet	25/09/2008	15	6	264	2	0	0	0	44.00	0.33	0.00	0.00	0.00
Pipestem Inlet	25/09/2008	16	6	369	2	0	0	0	61.50	0.33	0.00	0.00	0.00
Pipestem Inlet	25/09/2008	17	6	314	2	0	0	0	52.33	0.33	0.00	0.00	0.00
Pipestem Inlet	27/01/2009	1	18	460	68	0	0	0	25.56	3.78	0.00	0.00	0.00
Pipestem Inlet	27/01/2009	4	6	92	4	0	0	0	15.33	0.67	0.00	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Pipestem Inlet	28/01/2009	2	6	211	3	0	0	0	35.17	0.50	0.00	0.00	0.00
Pipestem Inlet	28/01/2009	3	5	107	0	0	0	0	21.40	0.00	0.00	0.00	0.00
Pipestem Inlet	28/01/2009	5	12	117	5	0	0	0	9.75	0.42	0.00	0.00	0.00
Pipestem Inlet	28/01/2009	6	6	41	0	0	0	0	6.83	0.00	0.00	0.00	0.00
Pipestem Inlet	29/01/2009	7	6	66	0	0	0	0	11.00	0.00	0.00	0.00	0.00
Pipestem Inlet	29/01/2009	8	18	168	0	0	0	0	9.33	0.00	0.00	0.00	0.00
Pipestem Inlet	29/01/2009	9	6	26	2	0	0	0	4.33	0.33	0.00	0.00	0.00
Pipestem Inlet	29/01/2009	10	12	13	0	0	0	0	1.08	0.00	0.00	0.00	0.00
Congreve Island	12/05/2009	1	6	1	0	7	0	0	0.17	0.00	1.17	0.00	0.00
Santa Maria Island	12/05/2009	2	6	0	0	28	11	0	0.00	0.00	4.67	1.83	0.00
Poett Nook	12/05/2009	3	6	0	0	4	2	0	0.00	0.00	0.67	0.33	0.00
Roquefeuil Bay	12/05/2009	4	6	0	0	0	38	0	0.00	0.00	0.00	6.33	0.00
Burlo Island	12/05/2009	5	6	0	0	0	25	0	0.00	0.00	0.00	4.17	0.00
Rance Island	12/05/2009	6	6	0	0	0	47	0	0.00	0.00	0.00	7.83	0.00
Port Desire	12/05/2009	7	6	0	0	1	23	0	0.00	0.00	0.17	3.83	0.00
Grappler Inlet	12/05/2009	8	6	0	0	0	53	0	0.00	0.00	0.00	8.83	0.00
Hohm Island	12/05/2009	15	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Johnstone Island	12/05/2009	16	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
San Mateo Bay	13/05/2009	9	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Ritherdon Creek	13/05/2009	10	6	2	0	4	0	0	0.33	0.00	0.67	0.00	0.00
Nahmint Bay	13/05/2009	11	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Franklin River	13/05/2009	12	6	0	0	4	0	0	0.00	0.00	0.67	0.00	0.00
Macktush Creek	13/05/2009	13	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Macktush Bay	13/05/2009	14	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Hillier Island	14/05/2009	17	6	117	2	0	0	0	19.50	0.33	0.00	0.00	0.00
Hillier Island	14/05/2009	18	6	137	0	1	0	0	22.83	0.00	0.17	0.00	0.00
Lucky Creek	14/05/2009	19	6	45	0	0	0	0	7.50	0.00	0.00	0.00	0.00
Lucky Creek	14/05/2009	20	6	76	2	0	0	0	12.67	0.33	0.00	0.00	0.00
Toquart River	14/05/2009	21	6	85	7	0	0	0	14.17	1.17	0.00	0.00	0.00
Toquart River	14/05/2009	22	6	72	0	0	2	0	12.00	0.00	0.00	0.33	0.00
Ucluelet Harbour	15/05/2009	23	6	0	92	0	0	0	0.00	15.33	0.00	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Kvarno Island	15/05/2009	24	6	0	90	0	0	0	0.00	15.00	0.00	0.00	0.00
Thornton Creek	15/05/2009	25	6	0	57	1	2	0	0.00	9.50	0.17	0.33	0.00
Ucluelet Harbour	15/05/2009	26	6	0	196	0	0	0	0.00	32.67	0.00	0.00	0.00
Kincolith Creek	03/06/2009	1	2	0	0	8	0	0	0.00	0.00	4.00	0.00	0.00
Iceberg Bay	03/06/2009	2	3	0	0	15	0	0	0.00	0.00	5.00	0.00	0.00
Nass Harbour	03/06/2009	5	6	0	0	8	0	0	0.00	0.00	1.33	0.00	0.00
Echo Cove	03/06/2009	6	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Iceberg Bay	03/06/2009	7	3	0	0	8	0	0	0.00	0.00	2.67	0.00	0.00
McGrath Island	04/06/2009	12	6	0	0	23	0	0	0.00	0.00	3.83	0.00	0.00
McGrath Island	04/06/2009	13	6	0	0	12	0	0	0.00	0.00	2.00	0.00	0.00
Stark Islet	04/06/2009	14	6	0	0	18	0	0	0.00	0.00	3.00	0.00	0.00
Isaac Creek	04/06/2009	15	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Vancouver Cove	04/06/2009	16	6	0	0	4	0	0	0.00	0.00	0.67	0.00	0.00
Kumeon Creek	06/06/2009	21	6	0	0	34	1	0	0.00	0.00	5.67	0.17	0.00
Crow Lagoon	06/06/2009	22	6	0	0	44	0	0	0.00	0.00	7.33	0.00	0.00
Crow Lagoon	06/06/2009	23	6	0	0	14	0	0	0.00	0.00	2.33	0.00	0.00
Manzanita Cove	07/06/2009	25	6	0	0	33	0	0	0.00	0.00	5.50	0.00	0.00
Wales Channel	07/06/2009	26	6	0	0	28	0	0	0.00	0.00	4.67	0.00	0.00
Wales Channel	07/06/2009	27	6	0	0	35	0	0	0.00	0.00	5.83	0.00	0.00
Winter Inlet	07/06/2009	30	6	0	0	9	0	0	0.00	0.00	1.50	0.00	0.00
Brundige Inlet	08/06/2009	33	1	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Brundige Inlet	08/06/2009	35	6	0	11	11	1	0	0.00	1.83	1.83	0.17	0.00
Brundige Inlet	08/06/2009	36	6	0	0	0	14	0	0.00	0.00	0.00	2.33	0.00
Fitch Island	08/06/2009	37	6	0	1	1	5	0	0.00	0.17	0.17	0.83	0.00
Fitch Island	08/06/2009	38	6	0	4	0	0	0	0.00	0.67	0.00	0.00	0.00
Pearl Harbour	09/06/2009	41	1	0	0	28	0	0	0.00	0.00	28.00	0.00	0.00
Cultivation Point	09/06/2009	42	6	0	0	44	0	0	0.00	0.00	7.33	0.00	0.00
Pearl Point	09/06/2009	43	6	0	0	36	1	0	0.00	0.00	6.00	0.17	0.00
Datum Rock	09/06/2009	44	6	0	0	47	0	0	0.00	0.00	7.83	0.00	0.00
Port Eliza	05/08/2009	1	6	1	21	0	0	0	0.17	3.50	0.00	0.00	0.00
Port Eliza	05/08/2009	2	6	1	89	0	0	0	0.17	14.83	0.00	0.00	0.00

				Catch					Catch Rates				
Location	**Haul Date**	**Set No.**	**No. Traps**	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Port Eliza	05/08/2009	3	6	26	17	0	0	0	4.33	2.83	0.00	0.00	0.00
Port Eliza	05/08/2009	4	6	3	47	0	0	0	0.50	7.83	0.00	0.00	0.00
Port Eliza	06/08/2009	5	6	0	90	0	0	0	0.00	15.00	0.00	0.00	0.00
Port Eliza	06/08/2009	6	6	1	50	0	0	0	0.17	8.33	0.00	0.00	0.00
Queens Cove	06/08/2009	7	6	1	1	13	0	0	0.17	0.17	2.17	0.00	0.00
Queens Cove	06/08/2009	8	6	13	1	3	0	0	2.17	0.17	0.50	0.00	0.00
Nuchatlitz	06/08/2009	9	6	0	0	37	1	0	0.00	0.00	6.17	0.17	0.00
Nuchatlitz	06/08/2009	10	6	0	3	19	18	0	0.00	0.50	3.17	3.00	0.00
Nuchatlitz	06/08/2009	11	7	0	1	3	30	0	0.00	0.14	0.43	4.29	0.00
Pipestem Inlet	10/05/2010	1	18	108	176	0	0	0	6.00	9.78	0.00	0.00	0.00
Pipestem Inlet	10/05/2010	2	6	93	10	0	0	0	15.50	1.67	0.00	0.00	0.00
Pipestem Inlet	10/05/2010	3	6	95	0	0	0	0	15.83	0.00	0.00	0.00	0.00
Pipestem Inlet	10/05/2010	4	6	97	7	0	0	0	16.17	1.17	0.00	0.00	0.00
Pipestem Inlet	10/05/2010	5	6	92	30	0	0	0	15.33	5.00	0.00	0.00	0.00
Pipestem Inlet	11/05/2010	6	18	235	79	0	0	0	13.06	4.39	0.00	0.00	0.00
Pipestem Inlet	11/05/2010	7	6	89	2	0	0	0	14.83	0.33	0.00	0.00	0.00
Pipestem Inlet	11/05/2010	8	5	57	28	0	0	0	11.40	5.60	0.00	0.00	0.00
Pipestem Inlet	11/05/2010	9	6	88	0	0	0	0	14.67	0.00	0.00	0.00	0.00
Pipestem Inlet	11/05/2010	10	6	84	11	0	0	0	14.00	1.83	0.00	0.00	0.00
Pipestem Inlet	11/05/2010	11	6	81	13	0	0	0	13.50	2.17	0.00	0.00	0.00
Pipestem Inlet	12/05/2010	12	18	113	158	1	0	0	6.28	8.78	0.06	0.00	0.00
Pipestem Inlet	12/05/2010	13	6	83	1	0	0	0	13.83	0.17	0.00	0.00	0.00
Pipestem Inlet	12/05/2010	14	6	48	0	0	0	0	8.00	0.00	0.00	0.00	0.00
Pipestem Inlet	12/05/2010	15	6	63	16	0	0	0	10.50	2.67	0.00	0.00	0.00
Pipestem Inlet	12/05/2010	16	6	73	31	1	0	0	12.17	5.17	0.17	0.00	0.00
Pipestem Inlet	12/05/2010	17	6	3	96	0	1	0	0.50	16.00	0.00	0.17	0.00
Pipestem Inlet	12/05/2010	18	6	0	56	3	0	0	0.00	9.33	0.50	0.00	0.00
Pipestem Inlet	12/05/2010	19	6	48	22	0	0	0	8.00	3.67	0.00	0.00	0.00
Pipestem Inlet	13/05/2010	20	18	101	45	0	0	0	5.61	2.50	0.00	0.00	0.00
Pipestem Inlet	13/05/2010	21	6	66	7	0	0	0	11.00	1.17	0.00	0.00	0.00
Pipestem Inlet	13/05/2010	22	6	61	8	0	0	0	10.17	1.33	0.00	0.00	0.00

				Catch					Catch Rates				
Location	**Haul Date**	**Set No.**	**No. Traps**	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Pipestem Inlet	13/05/2010	23	6	41	0	0	0	0	6.83	0.00	0.00	0.00	0.00
Pipestem Inlet	13/05/2010	24	6	38	22	0	0	0	6.33	3.67	0.00	0.00	0.00
Pipestem Inlet	13/05/2010	25	6	44	0	0	0	0	7.33	0.00	0.00	0.00	0.00
Pipestem Inlet	13/05/2010	26	6	42	0	0	0	0	7.00	0.00	0.00	0.00	0.00
Pipestem Inlet	13/05/2010	27	6	21	58	1	0	0	3.50	9.67	0.17	0.00	0.00
Pipestem Inlet	14/05/2010	28	18	86	167	0	6	0	4.78	9.28	0.00	0.00	0.00
Pipestem Inlet	14/05/2010	29	6	44	1	0	0	0	7.33	0.17	0.00	0.00	0.00
Pipestem Inlet	14/05/2010	30	6	48	29	4	0	0	8.00	4.83	0.67	0.00	0.00
Pipestem Inlet	14/05/2010	31	6	75	23	0	0	0	12.50	3.83	0.00	0.00	0.00
Pipestem Inlet	14/05/2010	32	6	61	54	0	0	0	10.17	9.00	0.00	0.00	0.00
Pipestem Inlet	14/05/2010	33	6	43	0	0	0	0	7.17	0.00	0.00	0.00	0.00
Pipestem Inlet	14/05/2010	34	6	44	33	0	0	0	7.33	5.50	0.00	0.00	0.00
Pipestem Inlet	14/05/2010	35	6	94	2	0	0	0	15.67	0.33	0.00	0.00	0.00
Pipestem Inlet	15/05/2010	36	18	105	9	0	0	0	5.83	0.50	0.00	0.00	0.00
Pipestem Inlet	15/05/2010	37	6	36	7	0	1	0	6.00	1.17	0.00	0.17	0.00
Pipestem Inlet	15/05/2010	38	6	65	1	0	0	0	10.83	0.17	0.00	0.00	0.00
Pipestem Inlet	15/05/2010	39	6	37	11	0	0	0	6.17	1.83	0.00	0.00	0.00
Pipestem Inlet	15/05/2010	40	6	27	21	0	0	0	4.50	3.50	0.00	0.00	0.00
Pipestem Inlet	15/05/2010	41	6	38	0	0	0	0	6.33	0.00	0.00	0.00	0.00
Pipestem Inlet	15/05/2010	42	6	53	13	0	0	0	8.83	2.17	0.00	0.00	0.00
Pipestem Inlet	15/05/2010	43	6	72	0	0	0	0	12.00	0.00	0.00	0.00	0.00
Pipestem Inlet	16/05/2010	44	18	116	7	0	0	0	6.44	0.39	0.00	0.00	0.00
Pipestem Inlet	16/05/2010	45	6	48	40	0	0	0	8.00	6.67	0.00	0.00	0.00
Pipestem Inlet	16/05/2010	46	6	57	5	0	0	0	9.50	0.83	0.00	0.00	0.00
Pipestem Inlet	16/05/2010	47	6	67	40	0	0	0	11.17	6.67	0.00	0.00	0.00
Pipestem Inlet	16/05/2010	48	6	47	59	0	0	0	7.83	9.83	0.00	0.00	0.00
Pipestem Inlet	16/05/2010	49	6	67	9	0	0	0	11.17	1.50	0.00	0.00	0.00
Denad Creek	28/05/2010	1	6	13	0	0	1	0	2.17	0.00	0.00	0.17	0.00
Denad Creek	28/05/2010	2	6	0	0	0	16	0	0.00	0.00	0.00	2.67	0.00
Wedel Island	28/05/2010	3	6	2	0	0	0	0	0.33	0.00	0.00	0.00	0.00
Galato Creek	28/05/2010	4	6	4	0	0	0	0	0.67	0.00	0.00	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Galato Creek	28/05/2010	5	6	19	0	0	0	0	3.17	0.00	0.00	0.00	0.00
Galato Creek	28/05/2010	6	6	6	1	2	0	0	1.00	0.17	0.33	0.00	0.00
Quashtin Creek	28/05/2010	7	6	0	0	3	10	0	0.00	0.00	0.50	1.67	0.00
Koskimo Creek	29/05/2010	8	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Mahatta River	29/05/2010	9	6	0	0	11	0	0	0.00	0.00	1.83	0.00	0.00
Spencer Creek	29/05/2010	10	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Spencer Creek	29/05/2010	11	6	4	0	0	0	0	0.67	0.00	0.00	0.00	0.00
Diggs Islet	29/05/2010	12	6	6	1	1	5	0	1.00	0.17	0.17	0.83	0.00
East Cove	29/05/2010	13	6	0	0	0	7	0	0.00	0.00	0.00	1.17	0.00
Monkey Creek	29/05/2010	14	6	0	0	16	2	0	0.00	0.00	2.67	0.33	0.00
Klaskino Inlet	30/05/2010	15	6	4	14	0	0	0	0.67	2.33	0.00	0.00	0.00
Klaskino Inlet	30/05/2010	16	6	0	20	0	0	0	0.00	3.33	0.00	0.00	0.00
Klaskino Inlet	30/05/2010	17	6	5	29	0	0	0	0.83	4.83	0.00	0.00	0.00
Klaskino Inlet	30/05/2010	18	6	0	32	0	3	0	0.00	5.33	0.00	0.50	0.00
Klaskino Anchorage	30/05/2010	19	6	0	1	0	19	0	0.00	0.17	0.00	3.17	0.00
Klaskino Anchorage	30/05/2010	20	6	0	1	4	5	0	0.00	0.17	0.67	0.83	0.00
Klaskino Anchorage	30/05/2010	21	6	0	9	1	14	0	0.00	1.50	0.17	2.33	0.00
Klaskish Inlet	31/05/2010	22	6	1	0	9	0	0	0.17	0.00	1.50	0.00	0.00
Klaskish Inlet	31/05/2010	23	6	4	0	8	0	0	0.67	0.00	1.33	0.00	0.00
Klaskish Inlet	31/05/2010	24	6	0	0	9	0	0	0.00	0.00	1.50	0.00	0.00
Klaskish Inlet	31/05/2010	25	6	0	0	3	0	0	0.00	0.00	0.50	0.00	0.00
Klaskish Inlet	31/05/2010	26	6	0	0	0	10	0	0.00	0.00	0.00	1.67	0.00
Klaskish Inlet	31/05/2010	27	6	3	0	5	0	0	0.50	0.00	0.83	0.00	0.00
Cachalot Inlet	01/06/2010	28	6	26	0	1	0	0	4.33	0.00	0.17	0.00	0.00
Cachalot Inlet	01/06/2010	29	6	10	0	4	0	0	1.67	0.00	0.67	0.00	0.00
Amai Inlet	01/06/2010	30	6	0	0	0	28	0	0.00	0.00	0.00	4.67	0.00
Amai Inlet	01/06/2010	31	6	5	5	0	30	0	0.83	0.83	0.00	5.00	0.00
Amai Inlet	01/06/2010	32	6	204	3	0	0	0	34.00	0.50	0.00	0.00	0.00
Amai Inlet	01/06/2010	33	6	124	24	0	0	0	20.67	4.00	0.00	0.00	0.00
Queen Cove	02/06/2010	34	6	3	0	2	0	0	0.50	0.00	0.33	0.00	0.00
Queen Cove	02/06/2010	35	6	3	0	1	0	0	0.50	0.00	0.17	0.00	0.00

				Catch					Catch Rates				
Location	**Haul Date**	**Set No.**	**No. Traps**	***C. maenas***	***C. gracilis***	***C. magister***	***C. productus***	***P. productus***	***C. maenas***	***C. gracilis***	***C. magister***	***C. productus***	***P. productus***
Queen Cove	02/06/2010	36	6	1	0	0	0	0	0.17	0.00	0.00	0.00	0.00
Port Eliza	02/06/2010	37	6	1	16	0	0	0	0.17	2.67	0.00	0.00	0.00
Port Eliza	02/06/2010	38	6	0	47	0	0	0	0.00	7.83	0.00	0.00	0.00
Port Eliza	02/06/2010	39	6	7	25	0	0	0	1.17	4.17	0.00	0.00	0.00
Port Eliza	02/06/2010	40	6	1	64	0	0	0	0.17	10.67	0.00	0.00	0.00
Inner Mary Basin	03/06/2010	41	6	3	0	0	0	0	0.50	0.00	0.00	0.00	0.00
Inner Mary Basin	03/06/2010	42	6	1	0	0	0	0	0.17	0.00	0.00	0.00	0.00
Guise Creek	03/06/2010	43	6	1	0	2	0	0	0.17	0.00	0.33	0.00	0.00
The Uterus	03/06/2010	44	6	0	14	0	0	0	0.00	2.33	0.00	0.00	0.00
Guise Creek	03/06/2010	45	6	0	0	2	3	0	0.00	0.00	0.33	0.50	0.00
Laurie Creek	03/06/2010	46	6	1	0	0	2	0	0.17	0.00	0.00	0.33	0.00
Espinoza Inlet	04/06/2010	47	6	0	0	0	2	0	0.00	0.00	0.00	0.33	0.00
Espinoza Inlet	04/06/2010	48	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Espinoza Inlet	04/06/2010	49	6	0	0	1	10	0	0.00	0.00	0.17	1.67	0.00
Little Espinoza Inlet	04/06/2010	50	6	0	0	0	4	0	0.00	0.00	0.00	0.67	0.00
Little Espinoza Inlet	04/06/2010	51	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Little Espinoza Inlet	04/06/2010	52	6	0	14	0	0	0	0.00	2.33	0.00	0.00	0.00
Little Espinoza Inlet	04/06/2010	53	6	1	2	1	0	0	0.17	0.33	0.17	0.00	0.00
Little Espinoza Inlet	04/06/2010	54	6	0	0	0	3	0	0.00	0.00	0.00	0.50	0.00
Zeballos	05/06/2010	55	6	3	0	0	0	0	0.50	0.00	0.00	0.00	0.00
Zeballos	05/06/2010	56	5	0	12	0	0	0	0.00	2.40	0.00	0.00	0.00
Zeballos	05/06/2010	57	7	6	0	0	0	0	0.86	0.00	0.00	0.00	0.00
Ubedam Creek	06/06/2010	58	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Tahsis Inlet	06/06/2010	59	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Head Tahsis East Side	06/06/2010	60	6	3	0	0	0	0	0.50	0.00	0.00	0.00	0.00
Tahsis Inlet	06/06/2010	61	6	0	1	1	0	0	0.00	0.17	0.17	0.00	0.00
Tahsis Inlet	06/06/2010	62	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Tahsis Inlet	06/06/2010	63	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Tahsis Inlet	06/06/2010	64	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Kendrick Inlet	07/06/2010	65	6	0	1	1	5	0	0.00	0.17	0.17	0.83	0.00
Kendrick Inlet	07/06/2010	66	5	0	2	0	0	0	0.00	0.40	0.00	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Bodega Island	07/06/2010	67	7	4	2	1	7	0	0.57	0.29	0.14	1.00	0.00
Bodega Island	07/06/2010	68	6	1	0	0	0	0	0.17	0.00	0.00	0.00	0.00
Jewitt Cove	07/06/2010	69	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Plumper Harbour	07/06/2010	70	6	0	0	0	14	0	0.00	0.00	0.00	2.33	0.00
Plumper Harbour	07/06/2010	71	6	0	0	2	1	0	0.00	0.00	0.33	0.17	0.00
Kendrick Inlet	07/06/2010	72	6	0	0	1	4	0	0.00	0.00	0.17	0.67	0.00
Moutcha Bay	08/06/2010	73	6	1	0	0	0	0	0.17	0.00	0.00	0.00	0.00
Moutcha Bay	08/06/2010	74	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Canton Creek	08/06/2010	75	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Canton Creek	08/06/2010	76	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Sucwoa River	08/06/2010	77	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Sucwoa River	08/06/2010	78	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Darr Island	10/06/2010	79	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Pretty Girl Cove	10/06/2010	80	6	0	0	0	8	0	0.00	0.00	0.00	1.33	0.00
Pretty Girl Cove	10/06/2010	81	6	5	0	0	0	0	0.83	0.00	0.00	0.00	0.00
Pretty Girl Cove	10/06/2010	82	6	4	0	0	0	0	0.67	0.00	0.00	0.00	0.00
Young Bay	10/06/2010	83	6	2	0	0	7	0	0.33	0.00	0.00	1.17	0.00
Whiskey Jenny	10/06/2010	84	6	0	0	0	15	0	0.00	0.00	0.00	2.50	0.00
Whiskey Jenny	10/06/2010	85	6	0	0	0	10	0	0.00	0.00	0.00	1.67	0.00
Megin River	11/06/2010	86	6	0	0	0	2	0	0.00	0.00	0.00	0.33	0.00
Megin River	11/06/2010	87	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Bacchante Bay	11/06/2010	88	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Bacchante Bay	11/06/2010	89	6	2	0	0	0	0	0.33	0.00	0.00	0.00	0.00
Atleo River	11/06/2010	90	6	1	0	17	3	0	0.17	0.00	2.83	0.50	0.00
Atleo River	11/06/2010	91	6	0	0	8	24	0	0.00	0.00	1.33	4.00	0.00
Little White Pine	12/06/2010	92	6	0	0	0	33	0	0.00	0.00	0.00	5.50	0.00
Little White Pine	12/06/2010	93	6	0	2	3	0	0	0.00	0.33	0.50	0.00	0.00
White Pine Cove	12/06/2010	94	6	0	0	8	0	0	0.00	0.00	1.33	0.00	0.00
White Pine Cove	12/06/2010	95	6	0	4	4	1	0	0.00	0.67	0.67	0.17	0.00
Moyeha Bay	12/06/2010	96	6	0	0	13	0	0	0.00	0.00	2.17	0.00	0.00
Moyeha Bay	12/06/2010	97	6	0	0	32	0	0	0.00	0.00	5.33	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Cypress Bay	13/06/2010	98	6	2	0	0	0	0	0.33	0.00	0.00	0.00	0.00
Cypress Bay	13/06/2010	99	6	12	0	0	4	0	2.00	0.00	0.00	0.67	0.00
Cypress Bay	13/06/2010	100	6	1	0	0	0	0	0.17	0.00	0.00	0.00	0.00
Cypress Bay	13/06/2010	101	6	7	0	0	20	0	1.17	0.00	0.00	3.33	0.00
Cataract Creek	15/06/2010	102	6	15	71	0	0	0	2.50	11.83	0.00	0.00	0.00
Cataract Bay	15/06/2010	103	6	7	70	0	0	0	1.17	11.67	0.00	0.00	0.00
Hillier Island	15/06/2010	104	6	75	2	0	0	0	12.50	0.33	0.00	0.00	0.00
Hillier Island	15/06/2010	105	6	94	0	0	0	0	15.67	0.00	0.00	0.00	0.00
Nettle Island	15/06/2010	106	6	2	0	0	37	0	0.33	0.00	0.00	6.17	0.00
Jacques Island	15/06/2010	107	6	0	0	0	26	0	0.00	0.00	0.00	4.33	0.00
Joe's Bay	15/06/2010	108	6	0	0	0	2	0	0.00	0.00	0.00	0.33	0.00
Joe's Bay	15/06/2010	109	6	0	0	0	20	0	0.00	0.00	0.00	3.33	0.00
Nettle's Island	16/06/2010	110	6	0	2	0	20	0	0.00	0.33	0.00	3.33	0.00
Cigarette Cove	16/06/2010	111	6	52	3	2	11	0	8.67	0.50	0.33	1.83	0.00
Useless Inlet	17/06/2010	112	6	0	54	2	0	0	0.00	9.00	0.33	0.00	0.00
Useless Inlet	17/06/2010	113	6	0	63	9	1	0	0.00	10.50	1.50	0.17	0.00
Brandon Point	28/05/2011	1	6	0	0	9	10	0	0.00	0.00	1.50	1.67	0.00
Brandon Point	28/05/2011	2	6	0	0	9	14	0	0.00	0.00	1.50	2.33	0.00
Gregory Islet	28/05/2011	3	6	0	0	52	5	0	0.00	0.00	8.67	0.83	0.00
Jula Island	28/05/2011	4	6	0	0	59	25	0	0.00	0.00	9.83	4.17	0.00
Deer Cove	28/05/2011	5	6	0	1	7	25	0	0.00	0.17	1.17	4.17	0.00
Bradley Lagoon	28/05/2011	6	6	0	1	14	5	0	0.00	0.17	2.33	0.83	0.00
Booker Lagoon	29/05/2011	7	6	0	91	1	1	0	0.00	15.17	0.17	0.17	0.00
Booker Lagoon	29/05/2011	8	6	0	8	0	0	0	0.00	1.33	0.00	0.00	0.00
Booker Lagoon	29/05/2011	9	6	0	51	5	1	0	0.00	8.50	0.83	0.17	0.00
Booker Lagoon	29/05/2011	10	6	0	42	6	7	0	0.00	7.00	1.00	1.17	0.00
Booker Lagoon	29/05/2011	11	6	0	14	0	8	0	0.00	2.33	0.00	1.33	0.00
Arthur Point	29/05/2011	12	6	0	0	33	15	0	0.00	0.00	5.50	2.50	0.00
Eden Island	29/05/2011	13	6	0	0	5	13	0	0.00	0.00	0.83	2.17	0.00
Eden Island	29/05/2011	14	6	0	0	12	0	0	0.00	0.00	2.00	0.00	0.00
Eden Island	29/05/2011	15	6	0	0	6	0	0	0.00	0.00	1.00	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Monday Anchorage	29/05/2011	16	6	0	0	0	25	0	0.00	0.00	0.00	4.17	0.00
Blackney Point	30/05/2011	17	6	0	0	4	20	0	0.00	0.00	0.67	3.33	0.00
Charters Point	30/05/2011	18	6	0	0	6	7	0	0.00	0.00	1.00	1.17	0.00
Skeene Bay	30/05/2011	19	6	0	0	13	37	0	0.00	0.00	2.17	6.17	0.00
Mount Ellis	30/05/2011	20	6	0	1	23	5	0	0.00	0.17	3.83	0.83	0.00
Sutherland Bay	30/05/2011	21	6	0	0	8	0	0	0.00	0.00	1.33	0.00	0.00
Sutherland Bay	30/05/2011	22	6	0	0	15	0	0	0.00	0.00	2.50	0.00	0.00
MacGowan Bay	30/05/2011	23	6	0	0	24	3	0	0.00	0.00	4.00	0.50	0.00
Collinson Bay	30/05/2011	24	6	0	0	2	24	0	0.00	0.00	0.33	4.00	0.00
Jerry's Bay	31/05/2011	25	6	0	7	6	2	0	0.00	1.17	1.00	0.33	0.00
Caviar Cove	31/05/2011	26	6	0	0	13	3	0	0.00	0.00	2.17	0.50	0.00
Davis Bay	31/05/2011	27	6	0	0	14	0	0	0.00	0.00	2.33	0.00	0.00
Tancred Bay	31/05/2011	28	6	0	0	2	35	0	0.00	0.00	0.33	5.83	0.00
Restless Bay	31/05/2011	29	6	0	0	0	35	0	0.00	0.00	0.00	5.83	0.00
Carriden Bay	31/05/2011	30	6	0	0	30	0	0	0.00	0.00	5.00	0.00	0.00
Wellis Bay	31/05/2011	31	6	0	0	33	1	0	0.00	0.00	5.50	0.17	0.00
Napier Bay	31/05/2011	32	6	0	0	3	17	0	0.00	0.00	0.50	2.83	0.00
Indian Island	01/06/2011	33	6	0	9	1	2	0	0.00	1.50	0.17	0.33	0.00
Broad Bay	01/06/2011	34	6	0	0	0	13	0	0.00	0.00	0.00	2.17	0.00
Anna Bay	01/06/2011	35	6	0	4	4	1	0	0.00	0.67	0.67	0.17	0.00
Sylvia Bay	01/06/2011	36	6	0	0	17	0	0	0.00	0.00	2.83	0.00	0.00
McBride Bay	01/06/2011	37	6	0	0	0	20	0	0.00	0.00	0.00	3.33	0.00
Margaret Bay	01/06/2011	38	6	0	0	2	0	0	0.00	0.00	0.33	0.00	0.00
Nekite River	02/06/2011	39	6	0	0	7	0	0	0.00	0.00	1.17	0.00	0.00
Walkum Bay	02/06/2011	40	6	0	0	21	0	0	0.00	0.00	3.50	0.00	0.00
Burnt Island	02/06/2011	41	6	0	0	3	0	0	0.00	0.00	0.50	0.00	0.00
Hickey Cove	02/06/2011	42	6	0	0	3	0	0	0.00	0.00	0.50	0.00	0.00
Naysash Creek	02/06/2011	43	6	0	0	36	0	0	0.00	0.00	6.00	0.00	0.00
Quascilla Bay	02/06/2011	44	6	0	0	44	0	0	0.00	0.00	7.33	0.00	0.00
Klaquaeck Channel	03/06/2011	45	6	0	0	15	30	0	0.00	0.00	2.50	5.00	0.00
Big Fry Pan Bay	03/06/2011	46	6	0	30	1	0	0	0.00	5.00	0.17	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Wilson Bay	03/06/2011	47	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Pierce Bay	03/06/2011	48	6	0	0	24	0	0	0.00	0.00	4.00	0.00	0.00
Illahie Inlet	04/06/2011	49	6	1	4	2	8	0	0.17	0.67	0.33	1.33	0.00
McClusky Bay	04/06/2011	50	6	0	2	7	13	0	0.00	0.33	1.17	2.17	0.00
Waterfall Inlet	04/06/2011	51	6	0	13	0	32	0	0.00	2.17	0.00	5.33	0.00
Fish Trap Bay	04/06/2011	52	6	1	2	0	9	0	0.17	0.33	0.00	1.50	0.00
Fish Egg Inlet	04/06/2011	53	6	0	14	1	0	0	0.00	2.33	0.17	0.00	0.00
Gildersleeve Bay	04/06/2011	54	6	0	1	0	14	0	0.00	0.17	0.00	2.33	0.00
Leckie Bay	05/06/2011	56	6	0	1	8	10	0	0.00	0.17	1.33	1.67	0.00
Watt Bay	05/06/2011	57	6	0	0	0	19	0	0.00	0.00	0.00	3.17	0.00
Spitfire Channel	05/06/2011	58	6	0	63	0	0	0	0.00	10.50	0.00	0.00	0.00
Hurricane Island	05/06/2011	59	6	0	16	0	3	0	0.00	2.67	0.00	0.50	0.00
Hurricane Island	05/06/2011	60	6	0	84	0	0	0	0.00	14.00	0.00	0.00	0.00
Kildit Narrows	05/06/2011	61	6	0	0	0	9	0	0.00	0.00	0.00	1.50	0.00
Gullchucks	06/06/2011	62	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Gullchucks	06/06/2011	63	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Kakushdish Harbour	06/06/2011	64	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Kakushdish Harbour	06/06/2011	65	6	0	18	0	0	0	0.00	3.00	0.00	0.00	0.00
Kakushdish Harbour	06/06/2011	66	6	0	13	6	0	0	0.00	2.17	1.00	0.00	0.00
Kakushdish Harbour	06/06/2011	67	6	0	6	1	0	0	0.00	1.00	0.17	0.00	0.00
Evans Inlet	07/06/2011	68	6	0	0	4	0	0	0.00	0.00	0.67	0.00	0.00
Evans Inlet	07/06/2011	69	6	0	0	26	0	0	0.00	0.00	4.33	0.00	0.00
Septimus Point	07/06/2011	70	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Codville Lagoon	07/06/2011	71	6	0	0	3	0	0	0.00	0.00	0.50	0.00	0.00
Codville Lagoon	07/06/2011	72	6	0	6	28	0	0	0.00	1.00	4.67	0.00	0.00
Codville Lagoon	07/06/2011	73	6	0	0	3	0	0	0.00	0.00	0.50	0.00	0.00
Wolf Lagoon	08/06/2011	74	6	0	7	23	2	0	0.00	1.17	3.83	0.33	0.00
Wolf Lagoon	08/06/2011	75	6	0	8	203	1	0	0.00	1.33	33.83	0.17	0.00
Passage Island	08/06/2011	76	6	0	9	92	0	0	0.00	1.50	15.33	0.00	0.00
Chatfield Island	08/06/2011	77	6	0	0	27	0	0	0.00	0.00	4.50	0.00	0.00
Chatfield Island	08/06/2011	78	6	0	0	18	0	0	0.00	0.00	3.00	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Chatfield Island	08/06/2011	79	3	0	9	11	0	0	0.00	3.00	3.67	0.00	0.00
Chatfield Island	08/06/2011	80	6	0	0	14	0	0	0.00	0.00	2.33	0.00	0.00
Troup Channel	08/06/2011	81	6	0	0	65	0	0	0.00	0.00	10.83	0.00	0.00
Wolf Lagoon	09/06/2011	82	6	0	0	50	1	0	0.00	0.00	8.33	0.17	0.00
Wolf Lagoon	09/06/2011	83	6	0	0	125	0	0	0.00	0.00	20.83	0.00	0.00
Longon Bay	11/06/2011	84	6	0	0	2	16	0	0.00	0.00	0.33	2.67	0.00
Newcombe Inlet	11/06/2011	85	6	0	0	0	3	0	0.00	0.00	0.00	0.50	0.00
Edwards Creek	11/06/2011	86	6	0	1	0	6	0	0.00	0.17	0.00	1.00	0.00
Wilson Bay	11/06/2011	87	6	0	0	1	7	0	0.00	0.00	0.17	1.17	0.00
Botany Inlet	11/06/2011	88	6	0	3	0	0	0	0.00	0.50	0.00	0.00	0.00
Botany Inlet	11/06/2011	89	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Fairfax Inlet	11/06/2011	90	6	0	0	0	17	0	0.00	0.00	0.00	2.83	0.00
Fairfax Inlet	11/06/2011	91	6	0	0	0	5	0	0.00	0.00	0.00	0.83	0.00
Fairfax Inlet	11/06/2011	92	6	0	0	0	8	0	0.00	0.00	0.00	1.33	0.00
Hunger Harbour	11/06/2011	93	6	0	0	0	3	0	0.00	0.00	0.00	0.50	0.00
Bearskin Bay	14/06/2011	94	6	0	0	2	28	0	0.00	0.00	0.33	4.67	0.00
Lina Island	14/06/2011	95	6	0	0	0	39	0	0.00	0.00	0.00	6.50	0.00
Leonide Point	14/06/2011	96	6	0	0	3	7	0	0.00	0.00	0.50	1.17	0.00
Deena Creek	14/06/2011	97	6	0	0	0	3	0	0.00	0.00	0.00	0.50	0.00
South Bay	14/06/2011	98	6	0	1	4	3	0	0.00	0.17	0.67	0.50	0.00
Boat Bay	14/06/2011	99	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Sandilands Island	14/06/2011	100	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Maude Island	14/06/2011	101	6	0	1	8	0	0	0.00	0.17	1.33	0.00	0.00
MacMillan Creek	14/06/2011	102	6	0	0	1	1	0	0.00	0.00	0.17	0.17	0.00
Transit Island	14/06/2011	103	6	0	4	0	3	0	0.00	0.67	0.00	0.50	0.00
Outlook Creek	15/06/2011	104	6	0	28	23	2	0	0.00	4.67	3.83	0.33	0.00
Slatechuck Creek	15/06/2011	105	6	0	0	5	12	0	0.00	0.00	0.83	2.00	0.00
Gosset Bay	15/06/2011	106	6	0	4	62	0	0	0.00	0.67	10.33	0.00	0.00
Lagins Creek	15/06/2011	107	6	0	0	24	6	0	0.00	0.00	4.00	1.00	0.00
Indian Cabin Creek	15/06/2011	108	6	0	0	3	4	0	0.00	0.00	0.50	0.67	0.00
Snow Peaks	15/06/2011	109	6	0	0	0	11	0	0.00	0.00	0.00	1.83	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Saltspring Bay	15/06/2011	110	6	0	0	10	5	0	0.00	0.00	1.67	0.83	0.00
Scalus Bay	15/06/2011	111	6	0	0	132	0	0	0.00	0.00	22.00	0.00	0.00
Christie Bay	15/06/2011	112	6	0	0	21	3	0	0.00	0.00	3.50	0.50	0.00
Dawson Cove	16/06/2011	113	6	0	0	0	29	0	0.00	0.00	0.00	4.83	0.00
Conglomerate Point	16/06/2011	114	6	0	0	0	44	0	0.00	0.00	0.00	7.33	0.00
Beattie Anchorage	16/06/2011	115	6	0	1	0	30	0	0.00	0.17	0.00	5.00	0.00
Carmichael Passage	16/06/2011	116	6	0	0	0	11	0	0.00	0.00	0.00	1.83	0.00
Gillatt Arm	16/06/2011	117	6	0	0	0	21	0	0.00	0.00	0.00	3.50	0.00
Gillatt Arm	16/06/2011	118	6	0	1	0	16	0	0.00	0.17	0.00	2.67	0.00
Pallant Creek	16/06/2011	119	5	0	0	0	7	0	0.00	0.00	0.00	1.40	0.00
Gordon Cove	16/06/2011	120	6	0	5	1	7	0	0.00	0.83	0.17	1.17	0.00
Gale Passage	18/06/2011	121	6	2	24	1	0	0	0.33	4.00	0.17	0.00	0.00
Gale Passage	18/06/2011	122	6	0	81	0	0	0	0.00	13.50	0.00	0.00	0.00
Gale Passage	18/06/2011	123	6	0	50	0	0	0	0.00	8.33	0.00	0.00	0.00
Gale Passage	18/06/2011	124	6	0	25	0	7	0	0.00	4.17	0.00	1.17	0.00
Gale Passage	18/06/2011	125	6	0	36	0	0	0	0.00	6.00	0.00	0.00	0.00
Gale Passage	18/06/2011	126	6	0	0	0	9	0	0.00	0.00	0.00	1.50	0.00
Cultus Sound	19/06/2011	127	6	0	3	0	17	0	0.00	0.50	0.00	2.83	0.00
Sans Peur Passage	19/06/2011	128	6	0	35	0	0	0	0.00	5.83	0.00	0.00	0.00
Kinsman Inlet	19/06/2011	129	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Cultus Sound	19/06/2011	130	6	0	4	0	13	0	0.00	0.67	0.00	2.17	0.00
Cultus Sound	19/06/2011	131	6	0	4	1	0	0	0.00	0.67	0.17	0.00	0.00
Keith Anchorage	20/06/2011	132	6	0	0	0	33	0	0.00	0.00	0.00	5.50	0.00
Whittaker Point	20/06/2011	133	6	0	0	2	4	0	0.00	0.00	0.33	0.67	0.00
Pruth Bay	20/06/2011	134	6	0	0	25	4	0	0.00	0.00	4.17	0.67	0.00
Pruth Bay	20/06/2011	135	6	0	0	16	4	0	0.00	0.00	2.67	0.67	0.00
Pruth Bay	20/06/2011	136	6	0	0	20	1	0	0.00	0.00	3.33	0.17	0.00
Keith Anchorage	20/06/2011	137	6	0	0	11	10	0	0.00	0.00	1.83	1.67	0.00
Keith Anchorage	20/06/2011	138	6	0	0	8	26	0	0.00	0.00	1.33	4.33	0.00
Fish Trap Bay	20/05/2012	1	6	0	0	0	2	0	0.00	0.00	0.00	0.33	0.00
Oyster Bay	20/05/2012	2	6	0	4	0	1	0	0.00	0.67	0.00	0.17	0.00

				Catch					Catch Rates				
Location	**Haul Date**	**Set No.**	**No. Traps**	***C. maenas***	***C. gracilis***	***C. magister***	***C. productus***	***P. productus***	***C. maenas***	***C. gracilis***	***C. magister***	***C. productus***	***P. productus***
Oyster Bay	20/05/2012	3	6	0	2	0	3	0	0.00	0.33	0.00	0.50	0.00
Illahie Inlet	20/05/2012	4	6	0	0	1	1	0	0.00	0.00	0.17	0.17	0.00
Illahie Inlet	20/05/2012	5	6	0	0	0	10	0	0.00	0.00	0.00	1.67	0.00
Green Island	20/05/2012	6	6	0	11	0	0	0	0.00	1.83	0.00	0.00	0.00
Big Fry Pan Bay	21/05/2012	7	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Big Fry Pan Bay	21/05/2012	8	6	0	0	6	0	0	0.00	0.00	1.00	0.00	0.00
Fury Island	21/05/2012	9	6	0	0	2	3	0	0.00	0.00	0.33	0.50	0.00
Duval Island	23/05/2012	10	6	0	0	0	23	0	0.00	0.00	0.00	3.83	0.00
Gale Passage	25/05/2012	11	6	6	1	0	0	0	1.00	0.17	0.00	0.00	0.00
Gale Passage	25/05/2012	12	6	4	6	0	0	0	0.67	1.00	0.00	0.00	0.00
Gale Passage	25/05/2012	13	6	4	3	0	0	0	0.67	0.50	0.00	0.00	0.00
Gale Passage	25/05/2012	14	6	1	1	0	0	0	0.17	0.17	0.00	0.00	0.00
Gale Passage	25/05/2012	15	6	2	0	1	0	0	0.33	0.00	0.17	0.00	0.00
Gale Passage	25/05/2012	16	6	25	1	0	0	0	4.17	0.17	0.00	0.00	0.00
Gale Passage	25/05/2012	17	6	5	2	0	0	0	0.83	0.33	0.00	0.00	0.00
Huston Inlet	27/05/2012	18	6	0	1	0	0	0	0.00	0.17	0.00	0.00	0.00
Huston Inlet	27/05/2012	19	6	0	1	0	0	0	0.00	0.17	0.00	0.00	0.00
Jedway Bay	27/05/2012	20	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Harriet Harbour	27/05/2012	21	6	0	0	0	7	0	0.00	0.00	0.00	1.17	0.00
Bag Harbour	27/05/2012	22	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Tangle Cove	27/05/2012	23	6	0	0	0	3	0	0.00	0.00	0.00	0.50	0.00
George Bay	27/05/2012	24	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Slim Inlet	27/05/2012	25	6	0	1	0	0	0	0.00	0.17	0.00	0.00	0.00
Flamingo Inlet	28/05/2012	26	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Flamingo Inlet	28/05/2012	27	6	0	0	0	14	0	0.00	0.00	0.00	2.33	0.00
Flamingo Inlet	28/05/2012	28	6	0	0	0	5	0	0.00	0.00	0.00	0.83	0.00
Flamingo Inlet	28/05/2012	29	6	0	0	1	1	0	0.00	0.00	0.17	0.17	0.00
Louscoone Inlet	28/05/2012	30	6	0	0	0	8	0	0.00	0.00	0.00	1.33	0.00
Louscoone Inlet	28/05/2012	31	6	0	0	0	9	0	0.00	0.00	0.00	1.50	0.00
Louscoone Inlet	28/05/2012	32	6	0	0	0	6	0	0.00	0.00	0.00	1.00	0.00
Louscoone Inlet	28/05/2012	33	6	0	0	0	2	0	0.00	0.00	0.00	0.33	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Louscoone Inlet	28/05/2012	34	6	0	0	0	14	0	0.00	0.00	0.00	2.33	0.00
Louscoone Inlet	28/05/2012	35	6	0	0	0	4	0	0.00	0.00	0.00	0.67	0.00
Gowgaia Bay	29/05/2012	36	6	0	0	4	5	0	0.00	0.00	0.67	0.83	0.00
Gowgaia Bay	29/05/2012	37	6	0	0	0	8	0	0.00	0.00	0.00	1.33	0.00
Gowgaia Bay	29/05/2012	38	6	0	0	0	10	0	0.00	0.00	0.00	1.67	0.00
Gowgaia Bay	29/05/2012	39	6	0	0	0	6	0	0.00	0.00	0.00	1.00	0.00
Englefield Bay	30/05/2012	40	6	0	4	1	4	0	0.00	0.67	0.17	0.67	0.00
Englefield Bay	30/05/2012	41	6	0	0	0	19	0	0.00	0.00	0.00	3.17	0.00
Englefield Bay	30/05/2012	42	6	0	0	0	7	0	0.00	0.00	0.00	1.17	0.00
Englefield Bay	30/05/2012	43	6	0	1	0	29	0	0.00	0.17	0.00	4.83	0.00
Englefield Bay	30/05/2012	44	6	0	0	0	4	0	0.00	0.00	0.00	0.67	0.00
Englefield Bay	30/05/2012	45	6	0	0	0	3	0	0.00	0.00	0.00	0.50	0.00
Rennell Sound	31/05/2012	46	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Rennell Sound	31/05/2012	47	6	0	0	1	2	0	0.00	0.00	0.17	0.33	0.00
Rennell Sound	31/05/2012	48	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Rennell Sound	31/05/2012	49	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Rennell Sound	31/05/2012	50	6	0	0	0	4	0	0.00	0.00	0.00	0.67	0.00
Spiller Channel	03/06/2012	51	6	0	0	6	3	0	0.00	0.00	1.00	0.50	0.00
Spiller Channel	03/06/2012	52	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Return Channel	03/06/2012	53	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Return Channel	03/06/2012	54	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Return Channel	03/06/2012	55	6	0	2	9	0	0	0.00	0.33	1.50	0.00	0.00
Return Channel	03/06/2012	56	6	0	0	1	1	0	0.00	0.00	0.17	0.17	0.00
Higgins Pass	04/06/2012	57	6	0	0	42	3	0	0.00	0.00	7.00	0.50	0.00
Higgins Pass	04/06/2012	58	6	0	0	5	0	0	0.00	0.00	0.83	0.00	0.00
Higgins Pass	04/06/2012	59	6	0	0	3	15	0	0.00	0.00	0.50	2.50	0.00
Higgins Pass	04/06/2012	60	6	0	4	1	0	0	0.00	0.67	0.17	0.00	0.00
Higgins Pass	04/06/2012	61	6	0	1	1	20	0	0.00	0.17	0.17	3.33	0.00
Price Lagoon	04/06/2012	62	6	0	0	5	1	0	0.00	0.00	0.83	0.17	0.00
Price Lagoon	04/06/2012	63	6	0	0	11	2	0	0.00	0.00	1.83	0.33	0.00
Gale Pass	05/06/2012	64	6	0	0	7	2	0	0.00	0.00	1.17	0.33	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Gale Pass	05/06/2012	65	6	0	0	0	8	0	0.00	0.00	0.00	1.33	0.00
Gale Pass	05/06/2012	66	6	0	0	0	14	0	0.00	0.00	0.00	2.33	0.00
Gale Pass	05/06/2012	67	6	0	0	0	21	0	0.00	0.00	0.00	3.50	0.00
Reid Passage	05/06/2012	68	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Reid Passag	05/06/2012	69	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Reid Passage	05/06/2012	70	6	0	0	7	1	0	0.00	0.00	1.17	0.17	0.00
Lambard Inlet	05/06/2012	71	6	0	7	14	0	0	0.00	1.17	2.33	0.00	0.00
Lady Trutch Passage	05/06/2012	72	6	0	0	0	26	0	0.00	0.00	0.00	4.33	0.00
Bullock Channel	06/06/2012	74	6	0	0	3	0	0	0.00	0.00	0.50	0.00	0.00
Bullock Channel	06/06/2012	75	6	0	0	5	1	0	0.00	0.00	0.83	0.17	0.00
Bullock Channel	06/06/2012	76	6	0	0	4	0	0	0.00	0.00	0.67	0.00	0.00
Bullock Channel	06/06/2012	77	6	0	0	12	5	0	0.00	0.00	2.00	0.83	0.00
Bullock Channel	06/06/2012	78	6	0	0	5	2	0	0.00	0.00	0.83	0.33	0.00
Troup Narrows	06/06/2012	79	6	0	0	2	0	0	0.00	0.00	0.33	0.00	0.00
Roscoe Inlet	07/06/2012	80	6	0	0	5	0	0	0.00	0.00	0.83	0.00	0.00
Roscoe Inlet	07/06/2012	81	6	0	0	3	0	0	0.00	0.00	0.50	0.00	0.00
Roscoe Inlet	07/06/2012	82	6	0	0	5	0	0	0.00	0.00	0.83	0.00	0.00
Roscoe Inlet	07/06/2012	83	6	0	0	3	0	0	0.00	0.00	0.50	0.00	0.00
Roscoe Inlet	07/06/2012	84	7	0	0	9	0	0	0.00	0.00	1.29	0.00	0.00
Roscoe Inlet	07/06/2012	85	6	0	0	10	0	0	0.00	0.00	1.67	0.00	0.00
Joassa Channel	08/06/2012	86	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Joassa Channel	08/06/2012	87	6	0	2	0	0	0	0.00	0.33	0.00	0.00	0.00
Joassa Channel	08/06/2012	88	6	0	4	0	0	0	0.00	0.67	0.00	0.00	0.00
Joassa Channel	08/06/2012	89	6	0	0	0	11	0	0.00	0.00	0.00	1.83	0.00
Joassa Channel	08/06/2012	90	6	0	2	0	0	0	0.00	0.33	0.00	0.00	0.00
Joassa Channel	08/06/2012	91	6	0	1	0	34	0	0.00	0.17	0.00	5.67	0.00
Boddy Narrows	08/06/2012	92	6	0	3	0	0	0	0.00	0.50	0.00	0.00	0.00
Louise Channel	08/06/2012	93	6	0	0	0	6	0	0.00	0.00	0.00	1.00	0.00
Boddy Narrows	08/06/2012	94	6	0	0	0	45	0	0.00	0.00	0.00	7.50	0.00
Boddy Narrows	08/06/2012	95	6	0	0	0	7	0	0.00	0.00	0.00	1.17	0.00
Seaforth Channel	09/06/2012	96	6	0	0	8	19	0	0.00	0.00	1.33	3.17	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Seaforth Channel	09/06/2012	97	6	0	11	19	0	0	0.00	1.83	3.17	0.00	0.00
Seaforth Channel	09/06/2012	98	6	0	3	8	2	0	0.00	0.50	1.33	0.33	0.00
Seaforth Channel	09/06/2012	99	6	0	0	3	0	0	0.00	0.00	0.50	0.00	0.00
Bella Bella	09/06/2012	100	6	0	4	7	0	0	0.00	0.67	1.17	0.00	0.00
Bella Bella	09/06/2012	101	6	0	2	4	0	0	0.00	0.33	0.67	0.00	0.00
Bella Bella	09/06/2012	102	6	0	38	0	0	0	0.00	6.33	0.00	0.00	0.00
Shearwater	09/06/2012	103	6	0	4	0	1	0	0.00	0.67	0.00	0.17	0.00
Shearwater	09/06/2012	104	6	0	1	0	1	0	0.00	0.17	0.00	0.17	0.00
Lama Passage	10/06/2012	105	6	0	0	0	4	0	0.00	0.00	0.00	0.67	0.00
Lama Passage	10/06/2012	106	6	0	2	7	4	0	0.00	0.33	1.17	0.67	0.00
Lama Passage	10/06/2012	107	6	0	0	0	3	0	0.00	0.00	0.00	0.50	0.00
Lama Passage	10/06/2012	108	6	0	0	2	0	0	0.00	0.00	0.33	0.00	0.00
Lama Passage	10/06/2012	109	6	0	28	6	9	0	0.00	4.67	1.00	1.50	0.00
Lama Passage	10/06/2012	110	6	0	3	5	0	0	0.00	0.50	0.83	0.00	0.00
Lama Passage	10/06/2012	111	6	0	1	2	0	0	0.00	0.17	0.33	0.00	0.00
Lama Passage	10/06/2012	112	6	0	0	2	15	0	0.00	0.00	0.33	2.50	0.00
Lama Passage	10/06/2012	113	6	0	1	2	1	0	0.00	0.17	0.33	0.17	0.00
Lama Passage	10/06/2012	114	6	0	0	23	0	0	0.00	0.00	3.83	0.00	0.00
Sooke Basin	18/07/2012	1	6	0	47	0	1	7	0.00	7.83	0.00	0.17	1.17
Sooke Basin	18/07/2012	2	6	0	297	0	0	0	0.00	49.50	0.00	0.00	0.00
Sooke Basin	18/07/2012	3	6	3	277	0	0	0	0.50	46.17	0.00	0.00	0.00
Sooke Basin	18/07/2012	4	6	13	252	0	0	5	2.17	42.00	0.00	0.00	0.83
Sooke Basin	18/07/2012	5	6	3	71	0	0	3	0.50	11.83	0.00	0.00	0.50
Sooke Basin	18/07/2012	6	6	19	164	0	0	0	3.17	27.33	0.00	0.00	0.00
Sooke Basin	18/07/2012	7	6	320	43	0	0	0	53.33	7.17	0.00	0.00	0.00
Sooke Basin	18/07/2012	8	6	39	184	0	0	0	6.50	30.67	0.00	0.00	0.00
Sooke Basin	18/07/2012	9	6	0	153	0	0	0	0.00	25.50	0.00	0.00	0.00
Sooke Basin	18/07/2012	10	6	0	97	0	0	0	0.00	16.17	0.00	0.00	0.00
Sooke Basin	19/07/2012	11	6	18	136	0	0	0	3.00	22.67	0.00	0.00	0.00
Sooke Harbour	19/07/2012	12	6	0	52	2	6	0	0.00	8.67	0.33	1.00	0.00
Sooke Harbour	19/07/2012	13	6	0	6	0	9	0	0.00	1.00	0.00	1.50	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Sooke Harbour	19/07/2012	14	6	0	12	9	0	0	0.00	2.00	1.50	0.00	0.00
Sooke Harbour	19/07/2012	15	6	0	63	0	1	0	0.00	10.50	0.00	0.17	0.00
Sooke Harbour	19/07/2012	16	6	0	6	0	2	0	0.00	1.00	0.00	0.33	0.00
Sooke Harbour	19/07/2012	17	6	0	16	3	2	0	0.00	2.67	0.50	0.33	0.00
Goldstream	30/05/2013	1	6	0	0	1	2	0	0.00	0.00	0.17	0.33	0.00
Goldstream	30/05/2013	2	6	0	0	0	3	0	0.00	0.00	0.00	0.50	0.00
Goldstream	30/05/2013	3	6	0	6	13	3	0	0.00	1.00	2.17	0.50	0.00
Spectacle Creek	30/05/2013	4	6	0	0	0	13	0	0.00	0.00	0.00	2.17	0.00
MacKenzie Bight	30/05/2013	5	6	0	0	0	24	2	0.00	0.00	0.00	4.00	0.33
Tod Inlet	30/05/2013	6	6	0	21	0	15	0	0.00	3.50	0.00	2.50	0.00
Patricia Bay	30/05/2013	7	6	0	3	0	17	0	0.00	0.50	0.00	2.83	0.00
Patricia Bay	30/05/2013	8	6	0	0	0	28	0	0.00	0.00	0.00	4.67	0.00
Burgoyne Bay	31/05/2013	9	6	0	0	0	9	0	0.00	0.00	0.00	1.50	0.00
Burgoyne Bay	31/05/2013	10	6	0	0	0	16	0	0.00	0.00	0.00	2.67	0.00
Genoa Bay	31/05/2013	11	6	0	1	5	0	0	0.00	0.17	0.83	0.00	0.00
Cowichan Bay	31/05/2013	12	6	0	0	9	0	0	0.00	0.00	1.50	0.00	0.00
Cowichan Bay	31/05/2013	13	6	0	0	13	0	0	0.00	0.00	2.17	0.00	0.00
Cowichan Bay	31/05/2013	14	6	0	1	7	0	0	0.00	0.17	1.17	0.00	0.00
Boatswain Bank	31/05/2013	15	6	0	0	0	3	0	0.00	0.00	0.00	0.50	0.00
Village Bay	01/06/2013	16	6	0	0	1	2	0	0.00	0.00	0.17	0.33	0.00
Miners Bay	01/06/2013	17	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Long Harbour	01/06/2013	18	6	0	259	0	4	0	0.00	43.17	0.00	0.67	0.00
Welbury Bay	01/06/2013	19	6	0	0	0	24	0	0.00	0.00	0.00	4.00	0.00
Ganges Harbour	01/06/2013	20	6	0	0	0	14	0	0.00	0.00	0.00	2.33	0.00
Ganges Harbour	01/06/2013	21	6	0	27	0	9	0	0.00	4.50	0.00	1.50	0.00
Ganges Harbour	01/06/2013	22	6	0	0	0	38	0	0.00	0.00	0.00	6.33	0.00
Ganges Harbour	01/06/2013	23	6	0	23	0	3	0	0.00	3.83	0.00	0.50	0.00
Nanoose Bay	02/06/2013	24	6	0	9	0	11	0	0.00	1.50	0.00	1.83	0.00
Nanoose Bay	02/06/2013	25	6	0	1	0	6	0	0.00	0.17	0.00	1.00	0.00
Nanoose Bay	02/06/2013	26	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Nanoose Bay	02/06/2013	27	6	0	4	0	0	0	0.00	0.67	0.00	0.00	0.00

Location	Haul Date	Set No.	No. Traps	Catch					Catch Rates				
				C. maenas	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Nanoose Bay	02/06/2013	28	6	0	1	0	0	0	0.00	0.17	0.00	0.00	0.00
Nanoose Bay	02/06/2013	29	6	0	36	1	0	0	0.00	6.00	0.17	0.00	0.00
Henry Bay	03/06/2013	30	6	0	10	0	24	0	0.00	1.67	0.00	4.00	0.00
Union Point	03/06/2013	31	6	0	59	0	33	1	0.00	9.83	0.00	5.50	0.17
Gartley Point	03/06/2013	32	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Roy Creek	03/06/2013	33	6	0	77	0	0	0	0.00	12.83	0.00	0.00	0.00
Comox Harbour	03/06/2013	34	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Comox Harbour	03/06/2013	35	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Comox Harbour	03/06/2013	36	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Von Donop Inlet	04/06/2013	37	6	0	139	0	0	0	0.00	23.17	0.00	0.00	0.00
Von Donop Inlet	04/06/2013	38	6	0	109	0	1	0	0.00	18.17	0.00	0.17	0.00
Von Donop Inlet	04/06/2013	39	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Von Donop Inlet	04/06/2013	40	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Redonda Bay	04/06/2013	41	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Evans Bay	04/06/2013	42	6	0	0	0	15	0	0.00	0.00	0.00	2.50	0.00
Evans Bay	04/06/2013	43	6	0	3	2	2	0	0.00	0.50	0.33	0.33	0.00
Evans Bay	04/06/2013	44	6	0	3	0	6	0	0.00	0.50	0.00	1.00	0.00
Evans Bay	04/06/2013	45	6	0	32	0	1	0	0.00	5.33	0.00	0.17	0.00
Grace Harbour	05/06/2013	46	5	0	13	0	9	0	0.00	2.60	0.00	1.80	0.00
Grace Harbour	05/06/2013	47	6	0	37	0	0	0	0.00	6.17	0.00	0.00	0.00
Lancelot Inlet	05/06/2013	48	6	0	126	0	0	0	0.00	21.00	0.00	0.00	0.00
Theodosia Inlet	05/06/2013	49	6	0	249	0	0	0	0.00	41.50	0.00	0.00	0.00
Theodosia Inlet	05/06/2013	50	6	0	205	0	0	0	0.00	34.17	0.00	0.00	0.00
Okeover Inlet	05/06/2013	51	6	0	3	0	20	0	0.00	0.50	0.00	3.33	0.00
Okeover Inlet	05/06/2013	52	6	0	6	0	13	0	0.00	1.00	0.00	2.17	0.00
Okeover Inlet	05/06/2013	53	6	0	4	0	0	0	0.00	0.67	0.00	0.00	0.00
Okeover Inlet	05/06/2013	54	6	0	37	0	2	0	0.00	6.17	0.00	0.33	0.00
Deep Bay	06/06/2013	55	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Mud Bay	06/06/2013	56	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Mud Bay	06/06/2013	57	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Ship Point	06/06/2013	58	6	0	22	0	2	0	0.00	3.67	0.00	0.33	0.00

				Catch					Catch Rates				
Location	**Haul Date**	**Set No.**	**No. Traps**	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Fanny Bay	06/06/2013	59	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Buckley Bay	06/06/2013	60	6	0	196	0	0	0	0.00	32.67	0.00	0.00	0.00
Hindoo Creek	06/06/2013	61	6	0	0	0	3	0	0.00	0.00	0.00	0.50	0.00
Metcalf Bay	06/06/2013	62	6	0	0	0	28	0	0.00	0.00	0.00	4.67	0.00
Agamemnon Channel	07/06/2013	63	6	0	11	2	0	0	0.00	1.83	0.33	0.00	0.00
Pender Harbour	07/06/2013	64	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Pender Harbour	07/06/2013	65	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Pender Harbour	07/06/2013	66	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Pender Harbour	07/06/2013	67	6	0	2	0	0	0	0.00	0.33	0.00	0.00	0.00
Pender Harbour	07/06/2013	68	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Hotham Sound	08/06/2013	69	6	0	0	0	4	0	0.00	0.00	0.00	0.67	0.00
Hotham Sound	08/06/2013	70	6	0	6	0	0	0	0.00	1.00	0.00	0.00	0.00
Hotham Sound	08/06/2013	71	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Saltery Bay	08/06/2013	72	6	0	0	6	0	0	0.00	0.00	1.00	0.00	0.00
Saltery Bay	08/06/2013	73	6	0	0	7	1	0	0.00	0.00	1.17	0.17	0.00
Kent's Beach	08/06/2013	74	6	0	0	5	0	0	0.00	0.00	0.83	0.00	0.00
Thunder Bay	08/06/2013	75	6	0	4	22	0	0	0.00	0.67	3.67	0.00	0.00
Thunder Bay	08/06/2013	76	6	0	0	59	0	0	0.00	0.00	9.83	0.00	0.00
Malaspina Strait	09/06/2013	77	6	0	12	1	0	0	0.00	2.00	0.17	0.00	0.00
Malaspina Strait	09/06/2013	78	6	0	0	0	1	0	0.00	0.00	0.00	0.17	0.00
Malaspina Strait	09/06/2013	79	6	0	0	18	0	0	0.00	0.00	3.00	0.00	0.00
Malaspina Strait	09/06/2013	80	6	0	0	10	0	0	0.00	0.00	1.67	0.00	0.00
Malaspina Strait	09/06/2013	81	6	0	0	1	0	0	0.00	0.00	0.17	0.00	0.00
Malaspina Strait	09/06/2013	82	6	0	0	10	1	0	0.00	0.00	1.67	0.17	0.00
Ladysmith Harbour	10/06/2013	83	6	0	1	0	40	1	0.00	0.17	0.00	6.67	0.17
Ladysmith Harbour	10/06/2013	84	6	0	21	0	2	0	0.00	3.50	0.00	0.33	0.00
Ladysmith Harbour	10/06/2013	85	6	0	24	0	0	0	0.00	4.00	0.00	0.00	0.00
Ladysmith Harbour	10/06/2013	86	6	0	202	0	8	0	0.00	33.67	0.00	1.33	0.00
Ladysmith Harbour	10/06/2013	87	6	0	183	0	1	0	0.00	30.50	0.00	0.17	0.00
Ladysmith Harbour	10/06/2013	88	6	0	147	0	2	0	0.00	24.50	0.00	0.33	0.00
Cufra Inlet	10/06/2013	89	6	0	1	0	29	0	0.00	0.17	0.00	4.83	0.00

				Catch					Catch Rates				
Location	**Haul Date**	**Set No.**	**No. Traps**	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*	*C. maenas*	*C. gracilis*	*C. magister*	*C. productus*	*P. productus*
Booth Bay	11/06/2013	90	6	0	0	0	62	0	0.00	0.00	0.00	10.33	0.00
Shoal Islands	11/06/2013	91	6	0	0	0	18	2	0.00	0.00	0.00	3.00	0.33
Shoal Islands	11/06/2013	92	6	0	0	0	14	0	0.00	0.00	0.00	2.33	0.00
Shoal Islands	11/06/2013	93	6	0	0	0	45	0	0.00	0.00	0.00	7.50	0.00
Thetis Island	11/06/2013	94	6	0	0	0	46	0	0.00	0.00	0.00	7.67	0.00
Thetis Island	11/06/2013	95	6	0	45	0	0	0	0.00	7.50	0.00	0.00	0.00
Lyall Harbour	12/06/2013	96	6	0	21	0	5	0	0.00	3.50	0.00	0.83	0.00
Boot Cove	12/06/2013	97	6	0	30	0	2	0	0.00	5.00	0.00	0.33	0.00
Hamilton Cove	12/06/2013	98	6	0	33	1	16	0	0.00	5.50	0.17	2.67	0.00
Brackett Cove	12/06/2013	99	6	0	5	0	41	0	0.00	0.83	0.00	6.83	0.00
Horton Bay	12/06/2013	100	6	0	32	4	10	0	0.00	5.33	0.67	1.67	0.00
Sooke Harbour	13/07/2013	1	6	0	154	18	4	0	0.00	25.67	3.00	0.67	0.00
Sooke Harbour	13/07/2013	2	6	2	128	1	1	0	0.33	21.33	0.17	0.17	0.00
Sooke Harbour	13/07/2013	3	6	0	32	2	4	0	0.00	5.33	0.33	0.67	0.00
Sooke Harbour	13/07/2013	4	6	0	69	1	0	0	0.00	11.50	0.17	0.00	0.00
Sooke Harbour	13/07/2013	5	6	0	1	1	15	0	0.00	0.17	0.17	2.50	0.00
Sooke Harbour	13/07/2013	6	6	0	2	5	14	0	0.00	0.33	0.83	2.33	0.00
Sooke Harbour	13/07/2013	7	6	0	58	0	2	0	0.00	9.67	0.00	0.33	0.00
Sooke Harbour	13/07/2013	8	6	0	3	28	0	0	0.00	0.50	4.67	0.00	0.00
Sooke Basin	14/07/2013	9	6	2	509	0	0	1	0.33	84.83	0.00	0.00	0.17
Sooke Basin	14/07/2013	10	6	4	217	36	0	0	0.67	36.17	6.00	0.00	0.00
Sooke Basin	14/07/2013	11	6	7	165	0	0	0	1.17	27.50	0.00	0.00	0.00
Sooke Basin	14/07/2013	12	6	7	55	0	0	0	1.17	9.17	0.00	0.00	0.00
Sooke Basin	14/07/2013	13	6	63	49	0	0	0	10.50	8.17	0.00	0.00	0.00
Sooke Basin	14/07/2013	14	6	72	169	0	0	0	12.00	28.17	0.00	0.00	0.00
Sooke Basin	14/07/2013	15	5	157	28	0	0	0	31.40	5.60	0.00	0.00	0.00
Sooke Basin	14/07/2013	16	6	397	133	0	0	0	66.17	22.17	0.00	0.00	0.00
Port San Juan	15/07/2013	17	6	0	0	1	26	0	0.00	0.00	0.17	4.33	0.00
Port San Juan	15/07/2013	18	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Port San Juan	15/07/2013	19	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Port San Juan	15/07/2013	20	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00

				Catch					Catch Rates				
Location	**Haul Date**	**Set No.**	**No. Traps**	***C. maenas***	***C. gracilis***	***C. magister***	***C. productus***	***P. productus***	***C. maenas***	***C. gracilis***	***C. magister***	***C. productus***	***P. productus***
Sooke Basin	16/07/2013	21	6	116	24	0	0	0	19.33	4.00	0.00	0.00	0.00
Sooke Basin	16/07/2013	22	6	144	19	0	0	0	24.00	3.17	0.00	0.00	0.00
Sooke Basin	16/07/2013	23	6	63	181	0	0	0	10.50	30.17	0.00	0.00	0.00
Sooke Basin	16/07/2013	24	6	175	117	0	0	0	29.17	19.50	0.00	0.00	0.00
Sooke Basin	16/07/2013	25	6	45	2	0	0	0	7.50	0.33	0.00	0.00	0.00
Sooke Harbour	16/07/2013	26	6	0	1	0	0	0	0.00	0.17	0.00	0.00	0.00
Esquimalt	16/07/2013	27	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Esquimalt	16/07/2013	28	6	0	191	0	1	0	0.00	31.83	0.00	0.17	0.00
Esquimalt	16/07/2013	29	6	0	138	0	0	0	0.00	23.00	0.00	0.00	0.00
Esquimalt	17/07/2013	30	6	0	2	0	0	0	0.00	0.33	0.00	0.00	0.00
Esquimalt	17/07/2013	31	6	0	20	0	0	0	0.00	3.33	0.00	0.00	0.00
Esquimalt	17/07/2013	32	6	0	13	6	0	0	0.00	2.17	1.00	0.00	0.00
Victoria Harbour	17/07/2013	33	6	0	0	2	14	0	0.00	0.00	0.33	2.33	0.00
Victoria Harbour	18/07/2013	34	6	0	39	0	0	0	0.00	6.50	0.00	0.00	0.00
Victoria Harbour	18/07/2013	35	6	0	26	21	0	0	0.00	4.33	3.50	0.00	0.00
Victoria Harbour	18/07/2013	36	6	0	10	48	0	0	0.00	1.67	8.00	0.00	0.00
Victoria Harbour	18/07/2013	37	6	0	6	85	0	0	0.00	1.00	14.17	0.00	0.00
Boundary Bay	19/07/2013	38	6	0	0	95	0	0	0.00	0.00	15.83	0.00	0.00
Boundary Bay	19/07/2013	39	6	0	0	279	0	0	0.00	0.00	46.50	0.00	0.00
Boundary Bay	19/07/2013	40	6	0	0	261	0	0	0.00	0.00	43.50	0.00	0.00
Boundary Bay	19/07/2013	41	6	0	0	16	0	0	0.00	0.00	2.67	0.00	0.00
Boundary Bay	19/07/2013	42	6	0	0	119	0	0	0.00	0.00	19.83	0.00	0.00
Boundary Bay	19/07/2013	43	6	0	0	63	0	0	0.00	0.00	10.50	0.00	0.00
Steveston	20/07/2013	44	6	0	0	3	0	0	0.00	0.00	0.50	0.00	0.00
Steveston	20/07/2013	45	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Steveston	20/07/2013	46	6	0	0	31	0	0	0.00	0.00	5.17	0.00	0.00
Steveston	20/07/2013	47	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00
Steveston	20/07/2013	48	6	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00

Appendix 2. Crustacean species encountered during distributional surveys for European Green Crab, *Carcinus maenas*, 2006 to 2013.

Scientific Name	Common Name	Count	Percent
Cancer gracilis	Graceful Crab	13663	45.16%
Cancer magister	Dungeness Crab	7088	23.43%
Cancer productus	Red Rock Crab	6000	19.83%
Pagurus granosimanus	Grainyhand Hermit	856	2.83%
Telmessus cheiragonus	Helmet Crab	510	1.69%
Pandalus danae	Coonstripe Shrimp	481	1.59%
Paguridae	Right-Handed Hermits	433	1.43%
Pandalus platyceros	Spot Prawn	304	1.00%
Hemigrapsus oregonensis	Green Shore Crab	281	0.93%
Hemigrapsus nudus	Purple Shore Crab	272	0.90%
Pagurus hirsutiusculus	Hairy Hermit Crab	170	0.56%
Pugettia productus	Northern Kelp Crab	105	0.35%
Pagurus		25	0.08%
Oregonia gracilis	Graceful Decorator Crab	8	0.03%
Paguristes turgidus	Furry Hermit	8	0.03%
Pentidotea wosnesenskii	Isopod	8	0.03%
Crangon nigricauda	Sand Crangon	6	0.02%
Chorilia longipes	Redclaw Crab	5	0.02%
Lophopanopeus bellus bellus	Blackclaw Crab	5	0.02%
Pandalus hypsonotus	Humpback Shrimp	4	0.01%
Crangonidae		3	0.01%
Hyas lyratus	Pacific Lyre Crab	3	0.01%
Paguristes		3	0.01%
Pugettia richii	Cryptic Kelp Crab	3	0.01%
Crangon franciscorum	California Bay Shrimp	2	0.01%
Crangon franciscorum franciscorum	Bay Crangon	2	0.01%
Placetron wosnessenskii	Scaled Crab	2	0.01%
Cancer oregonensis	Pygmy Rock Crab	1	0.00%
Crangon alaskensis	Northern Crangon	1	0.00%
Crangon franciscorum angustimana	Long-clawed Crangon	1	0.00%
Lebbeus groenlandicus	Spiny Lebbeid	1	0.00%
Pagurus beringianus	Bering Hermit	1	0.00%
Pagurus ochotensis	Alaskan Hermit	1	0.00%
Grand Total		**30256**	**100.00%**

Appendix 3. Fish species encountered during distributional surveys for European Green Crab, *Carcinus maenas*, 2006 to 2013.

Scientific Name	Common name	Count	Percent
Leptocottus armatus	Pacific Staghorn Sculpin	5627	78.35%
Cottus asper	Prickly Sculpin	410	5.71%
Artedius fenestralis	Padded Sculpin	251	3.49%
Cymatogaster aggregata	Shiner Perch	155	2.16%
Sebastes caurinus	Copper Rockfish	130	1.81%
Myoxocephalus polyacanthocephalus	Great Sculpin	104	1.45%
Platichthys stellatus	Starry Flounder	101	1.41%
Pholis laeta	Crescent Gunnel	35	0.49%
Chitonotus pugetensis	Roughback Sculpin	34	0.47%
Limanda aspera	Yellowfin Sole	32	0.45%
Enophrys bison	Buffalo Sculpin	27	0.38%
Leptoclinus maculatus	Daubed Shanny	26	0.36%
Hexagrammos stelleri	White spotted Greenling	20	0.28%
Gasterosteus aculeatus	Threespine Stickleback	18	0.25%
Hemilepidotus hemilepidotus	Red Irish Lord	18	0.25%
Citharichthys stigmaeus	Speckled Sanddab	17	0.24%
Lepidopsetta bilineata	Southern Rock Sole	15	0.21%
Artedius harringtoni	Scalyhead Sculpin	14	0.19%
Icelinus tenuis	Spotfin sculpin	13	0.18%
Squalus suckleyi	Pacific Spiny Dogfish	11	0.15%
Citherichthys sordidus	Pacific Sanddab	10	0.14%
Porichthys notatus	Plainfin Midshipman	9	0.13%
Hemilepidotus spinosus	Brown Irish Lord	8	0.11%
Pleuronichthys coenosus	C-O Sole	8	0.11%
Hexagrammos lagocephalus	Rock Greenling	7	0.10%
Sebastes auriculatus	Brown Rockfish	6	0.08%
Hexagrammos decagrammus	Kelp Greenling	5	0.07%
Pleuronichthys decurrens	Curlfin Sole	5	0.07%
Rhinogobiops nicholsii	Blackeye Goby	5	0.07%
Eptatretus stoutii	Pacific Hagfish	4	0.06%
Lumpenus sagitta	Snake Prickleback	4	0.06%
Parophrys vetulus	English Sole	4	0.06%
Pholis ornata	Saddleback Gunnel	4	0.06%
Ronquilus jordani	Northern Ronquil	4	0.06%
Apodichthys flavidus	Penpoint Gunnel	3	0.04%
Artedius lateralis	Smoothhead Sculpin	3	0.04%
Hexagrammidae	Greenlings	3	0.04%
Ophiodon elongatus	Lingcod	3	0.04%
Pholis clemensi	Longfin Gunnel	3	0.04%
Cottidae	Sculpins	2	0.03%
Nautichthys oculofasciatus	Sailfin Sculpin	2	0.03%
Oligocottus maculosus	Tidepool Sculpin	2	0.03%
Syngnathus leptorhynchus	Bay Pipefish	2	0.03%
Blepsias cirrhosus	Silverspotted Sculpin	1	0.01%
Brachyistius frenatus	Kelp Perch	1	0.01%

Scientific Name	Common name	Count	Percent
Clupea pallasii	Pacific Herring	1	0.01%
Embiotoca lateralis	Striped Seaperch	1	0.01%
Liparis callyodon	Spotted Snailfish	1	0.01%
Liparis dennyi	Marbled Snailfish	1	0.01%
Liparis pulchellus	Showy Snailfish	1	0.01%
Oncorhynchus clarkii	Cutthroat Trout	1	0.01%
Oxylebius pictus	Painted Greenling	1	0.01%
Pleuronectidae	Right Eye Flounder	1	0.01%
Psettichthys melanostictus	Sand Sole	1	0.01%
Rhacochilus vacca	Pile Perch	1	0.01%
Salvelinus malma	Dolly Varden	1	0.01%
Scorpaenichthys marmoratus	Cabezon	1	0.01%
Sebastes flavidus	Yellowtail Rockfish	1	0.01%
Sebastes melanops	Black Rockfish	1	0.01%
Stichaeidae	Pricklebacks	1	0.01%
Xiphister mucosus	Rock Prickleback	1	0.01%
Total		**7182**	**100.00%**

Appendix 4. Mollusc species encountered during trap surveys for European green crab, Carcinus maenas, in British Columbia, 2006 to 2013.

Scientific Name	Common Name	Count	Percent
Lirabuccinum dirum	Dire Whelk	593	69.44%
Alia carinata	Carinate Dovesnail	122	14.29%
Haminoea vesicula	Blister Glassy-bubble	57	6.67%
Buccinidae	Whelks	51	5.97%
Tegula fumebralis	Black Tegula	13	1.52%
Fusitriton oregonensis	Oregon Triton	5	0.59%
Ilyanassa obsloeta	Eastern Mudsnail	4	0.47%
Batillaria attramentaria	Japanese False Cerith	3	0.35%
Nucella lamellosa	Frilled Dogwinkle	3	0.35%
Nudibranchia	Seaslugs	1	0.12%
Ocinebrina interfossa	Sculptured Rocksnail	1	0.12%
Pomaulax gibberosa	Red Turban	1	0.12%
Total		**854**	**100.00%**

Appendix 5. Echinoderm species encountered during distributional surveys for European Green Crab, Carcinus maenas, 2006 to 2013.

Scientific Name	Common Name	Count	Percent
Pycnopodia helianthoides	Sunflower Star	365	73.59%
Patiria miniata	Bat Star	86	17.34%
Strogylocentrotus droebachiensis	Green Sea Urchin	23	4.64%
Evasterias troschelii	Mottled Star	9	1.81%
Dermasterias imbricata	Leather Star	6	1.21%
Cucumaria pseudocurata	Tar Spot Sea Cucumber	3	0.60%
Pisaster brevispinus	Giant Pink Star	3	0.60%
Pisaster ochraceus	Purple Star	1	0.20%
Total		**496**	**100.00%**